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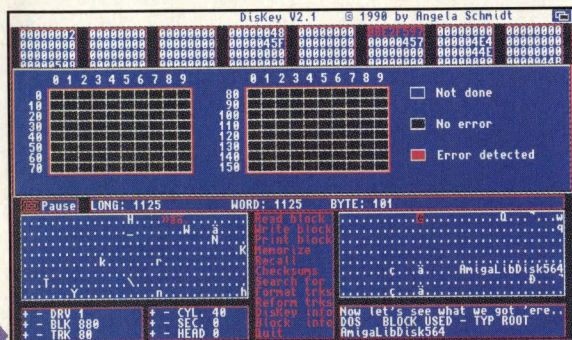
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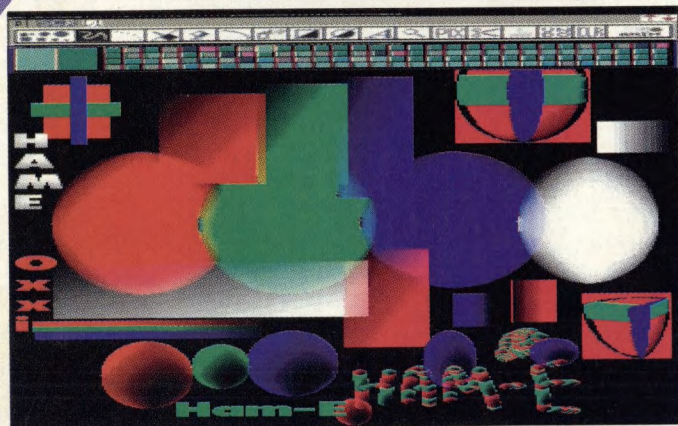
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CONSTANT FACTORS

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- 84 Newsfile: Thematic Clip Art, Seikasha Personal Printer, ICPUG Around the UK, Deskjet 500C plus lots more of the latest products, developments and sheer craziness of this wild world of Amiga computers in the Newsfile.
- 108 Amiga Answers: Andy Eskelson stands bravely among this month's wave of technical queries and comes up with perfect answers in this 4-page extravaganza. Keep them coming in... Andy is waving not drowning!
- 112 Amiga Letters: If you have a point to make than Bud Vennos offers you the freedom of the *AUI* pages and the chance to Write To Reply.
- 114 The Fat Lady Sings: It ain't over till she does but before that a truly fantastic competition with dazzling, in fact blinding prizes and also 25 Things You didn't Know You Wanted to. Know About Amiga Graphics as only The Fat Lady could tell you.

USERDISK

- 8 Userdisk: Yes eager beavers, it's Userdisk time. A superb useable demo of the great tiling package Scala 500. The latest version of Virus_Checker and a great utility for converting Workbench 1.3 icons into Workbench 2.0 icons. You too can be up with the leaders! It's all on the *AUI* Superdisk!

EXTRA! READ ALL ABOUT IT

- 10 Next month your copy of *AUI* will be different. (And don't say it is every month!) Not only will it have a completely new sparkling design, but it will have new great features and ideas...Well, read about it on page 10 now!

IN VISION!

17 SPECIAL GRAPHICS SUPPLEMENT.

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in Amiga graphics and enjoy your machine at its stunning best!

FIELD REPORTS

- 43 A Look Back At Vidi: Mike Nelson reports on the way it was, and the way it is on one of the Amiga's most notable graphics products.
- 90 California '92 It's Showtime, folks, agin'. Mike Nelson spends so much time Stateside that he's losing his Welshness and starting to look like a Texan rancher. He dons his stetson and cruises aboard the Queen Mary with all the cream of the Amiga community at the latest AmiExpo in California.

TEST DRIVE

- 13 SuperJAM: As promised last month, Paul Overaa makes a detailed examination of this extraordinary new music package from Blue Ribbon Soundworks.
- 18 SCALA: For presentations, demos, and video, Scala and Scala 500 are breaking new ground as Gary Fenton discovers when he test drives this package that is making tiling history.
- 27 DCTV: Mike Nelson test drives this plug-in graphics system which is claimed to be bringing a low cost revolution to the Amiga.
- 26 Caligari 2: The newest version in the Caligari series of professional 24-bit rendering software is put through its userfriendly but exceptional paces by Gary Fenton.
- 32 Presentation Master: Mike Nelson puts this business authoring tool from OXXI which proclaims that making presentations is easy through the severest of tests. And gets some surprising results.
- 38 Take 2: Rombo's art and video animation too — which they think is the Amiga answer to Walt Disney — is examined by Mike Nelson.
- 40 Spectracolor HAM E: Some say Spectracolor never really made it big because of the HAM capability that DPaint IV showed, but Gary Fenton finds that it scores one better in its HAM E version.

WORK FOR *AUI*?

We are looking for editorial/production staff for *AUI*. If you know the Amiga well, have experience in publishing or journalism, are 20 years of age or more, live in or close to London, contact the Managing Editor. But we don't need games reviewers, thank you!

TEST DRIVE

- 53** Animation Workshop: Peter Lee tests this interesting but inexpensive animation tool and finds it has come totally original ways.
- 70** Pagestream 2.2: The best just gets better – Jonathan Living appraises Softlogik's superior DTP package. The heavyweight champion is defending its title...
- 72** Devpac 3: Bill Harvey scrutinizes the upgrade to the popular HiSoft Assembler and finds it presents some stand out new ideas.
- 76** Thinker 2.1: Sometimes help is needed to allow a clear thought to prosper as Jonathan Living discovers.
- 78** Oktagon: Hartmut Schumacher uncovers an established, but up-to-date hard drive controller board with formidable expansion possibilities.
- 98** Megachip 500: If speed is paramount to your A500, then let Mike Nelson demonstrate to you the joys of this outstanding expansion.

MENTOR

- 94** Programming on The Amiga: To kick off a new, exclusive programming series on every usable Amiga programming language, Mike Nelson introduces the availability of helpful utilities.
- 101** A to Z of the Amiga Part 3: John Kennedy finalises his irreverent, "honest guy" guide to the Amiga and its jargon. Only in *AUI* can you learn such things...
- 104** Polynomials Part 2: Paul Overaa concludes his two-part series on the concepts behind polynomials.

USER PORT

- 49** Structured Art: Gwynne Harper puts the two leading programs – Gold Disk's ProDraw and New Horizon's DesignWorks Head to Head in this coverage of what you should know if you want to lose the jaggies.
- 57** AMIGA ART – Dithering: Well-renowned for his verbal ditherings, Graham Baldock shows you how to dither successfully on your Amiga screens.
- 80** Fred Fish Update: Norman Stone, disk custodian of ICPUG, reveals the latest Fred Fish catches and watches the whole range of goodies come swimming in.

SPECIAL OFFERS

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- 63** Subscribe: Subscribe to *AUI* and receive a free boxed set of 10 pre-formatted 3.5in. disks, each with its own Amiga User International designer label.

ENTERTAINMENT



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- 57** Smash TV – Ocean
- 57** Terminator 2 – Ocean
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- 113** Nightmare – Mindscape
- 113** Suspicious Cargo – Gremlin
- 114** Another World – US Gold
- 114** Space 1889 – Empire

AMIGA DIMENSION

Dear Reader,

We report from the AmiExpo in California in this *AUI*, that there is a new version of Defender of the Crown on the way. The first version was the product that started the Amiga's rise in the U.K. It captured the imagination of the public when *AUI* exclusively (of course!) reviewed it coming out under the banner of Mindscape, then virtually unknown in the U.K. It was distributed in this country through Mirrorsoft who were not regarded till then as a games company.

Not gameplay but graphics were its real Wow! factor. No-one had seen on an ordinary computer such gorgeous visions. The sheer impact of the game's graphics brought the Amiga attention it had not until then achieved. And it sold more Amigas than anything else had, according to the Commodore MD of the time.

Graphics have been all along the Amiga's greatest plus. Thanks to Jay Miner and the other creators of the original Amiga, the brilliant blitter made this computer stand out from others like the Mac or ST which used the same 68000 Motorola processor. DeluxePaint arrived to show what the Amiga could do with good software and now in the U.S. there is the hybrid soft/hardware Video Toaster still vividly making a similar point.

We have this month some astonishingly talented graphics products under review: Caligari with its exceptionally userfriendly interface; Take 2 from the British company Rombo; DCTV and many others including Scala, which must be one of the most outstanding packages of its kind to appear on any computer. You can appreciate Scala's and the quality of graphics today on the Amiga by using the demonstration version that is on our Coverdisk.

If graphics gave the Amiga its edge over others in the past, it continues to maintain that through the excellent products that are still coming and available for use by professionals. Next month we will be examining the stunning new Imagine and showing how professionals are using the Amiga to produce amazing work in a number of different fields.

It is ironic that a new Defender of the Crown is to arrive soon. Bob Jacobs' company, which created the original game that Mindscape released, went bust. Mindscape is now well known in the U.K. but only after it had its own troubles and was taken over by Software Toolworks. Mirrorsoft rose high but has now disappeared as a result of the fall of the Maxwell organisation that owned it. And Commodore shows signs of turning back to the Amiga as a real computer, not a games machine, to make its future profits. All of which adds up to what might be called a graphical illustration of the speed of change in the Amiga dimension...

Yours sincerely,

Antony Jacobson
Managing Editor

PRODUCTS USED TO HELP CREATE THIS MONTH'S *AUI*

Arnor's Protext 5.0, ASDG's Art Department Professional and Cygnus Ed, Canon's RC-260 Still Video Camera, DATEL's Action Display Cartridge, CCS's Dos-2-Dos, Checkmate's 1500, Electronic Art's Deluxe Paint III and IV, GVP's Series II FaaastROM Hard Disk Controller Card fitted with 8Mb SIMM expansion memory and a 105Mb Quantum 11ms Hard Drive, Hisoft's Devpac, Innovatronics CanDo, Microsystem's Scribble!, Newtek's DigiView Gold 4.0, Supra's 500XP Hard Disk Drive Controller Card, Nordic's Power Cartridge, Oxxi's SpectraColor, Precision's Superbase Professional 4, Real 3D, Nik William's PictureWare, JVC GR-S505 Camcorder, GST Gold SP, Professional Page 2.1, 32 Bit Ram from First Choice Computers

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OR	
Picture Book: 4 colourful and amusing games from a company masterminded by the design and project manager of the award winning Fun School 2. With lower case keyboard overlay and "raspberry", crowd cheers and animal noises that will delight young children.	
• Deluxe Paint II or Photon Paint II	89.99
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	VALUE/RRP
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• Fun School 3 or 4, specify, under 5 years, 5 to 7 years or 7+ years.	
12 stunning UK educational games with beautiful pictures, exciting animation and music that helps to develop number, word and other skills. Up to 6 skill levels. Conform to National Curriculum requirements.	24.99
• Postman Pat (1.3 only), OR Edd the Duck (7+ years) OR Matched Pairs OR Blinky's Scary School	14.99
• Hobbyte Infant or Junior (specify) Educational Pack, featuring up to 12 "Learn while you play" games	19.99
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SPECIAL: Also with Cartoon Classics Games	
Dpaint III instead of Dpaint II/ Photon Paint II (1MB required)	VALUE 80.00 ADD 17.99

THOMAS'S PACK 3-9 YEARS

	VALUE/RRP
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OR	
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• Hobbyte Junior Educational PD Pack, containing 10 fun while you learn games.	19.99
• Hobbyte 30 Easy Children's Games Pack	19.99
• 10 Blank Discs, Disc Box, Joystick, Mouse Mat	26.96
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• Joystick, mouse mat, 10 blank discs	21.97
TOTAL VALUE	496.70
WITH AMIGA/CDTV SEPARATELY	139.99 179.99
SPECIAL: Also with Star LC 200 9 PIN	
Colour Printer and Starter Pack	ADD 185.00
Also with Citizen 224+24 Pin	
Colour Printer and Starter Pack	ADD 245.00

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AUI USERDISK No. 11

This month we are delighted to present a fully usable demo of Digital Vision's Scala 500 titling and presentation package. The latest version of Virus Checker (v6.0) is also on the disk and so is a very useful utility called RemapInfo.

Getting Started

The Userdisk is fully autobooting, so just switch on your computer and put the Userdisk into your internal disk drive. Your Amiga will then load up Workbench automatically for you. Follow the instructions on these pages for more information about how to make the most of your Userdisk.

Scala 500

Thanks to Digital Vision, you have a complete working copy of Scala 500, reviewed on pages 24-26. The only restrictions on our demo version of Scala 500 are that there is no SAVE function, you can create a maximum of 10 pages, and some upper case letters have been removed.

Loading Scala 500

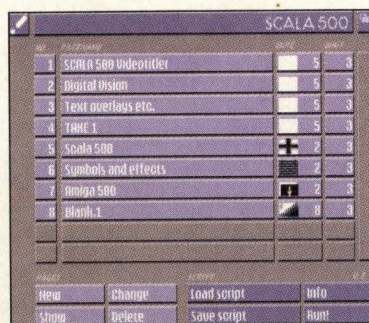
To load Scala 500, double click with your left mouse button on the Scala500 icon. It takes just under a minute to load, so please wait patiently.

Let's Go!

The best thing to do when Scala has loaded is to take a look at an example script that's already on the Userdisk. Move the mouse pointer to the button marked LOAD SCRIPT and click on it once with your left mouse button.

The screen that appears is called a file requester. The file is on the disk in drive DF0:, so click on the button marked DF0:. When the directory has loaded you should be able to see a file called EXAMPLE.SCRIPT. Click once on this file and then select the OK button. The file will now load.

After the script file has loaded you will be back at the main screen again. This time there a lot of information there which is actually the contents of the script. To get the script running, click once on the RUN!



button. Now, sit back and watch the presentation. Press ESCAPE on the keyboard to quit or wait for it to finish.

When the example has finished you will be back at the main menu. Can load up another example script called SCROLL.SCRIPT. Alternatively, move your mouse pointer to the top left of the screen and click once on the large exclamation mark (!). A requester will appear asking you what to do. We want to clear the current script so click on CLEAR.

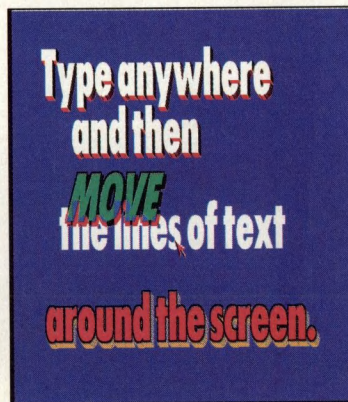
To create a new page, click once on the button marked NEW. Another file requester will appear asking you to load in a background. If you don't want a background, click on OK. A small requester will pop up at the bottom of the screen asking you about the new page. By clicking on the different buttons you can change the page's preferences

You will now be in the page editing section of Scala 500. The panel at the bottom controls every aspect of the text and any pictures you load in.

Controls

FRONT: The colour in this box is the current colour of the text. To change it, select a new colour from the on-screen palette and then click once in the coloured square in the FRONT box.

OUTLINE: Clicking on this box will toggle the text or brush outline on and off. The colour of the current outline is shown in the square. The default colour is black, but you can change it by choosing a new colour and clicking once in the square.



SHADOW: This will add a shadow to the current text or brush. The colour of the shadow can be changed by clicking on a new colour from the on-screen palette and then click in the colour square in the shadow box.

3D: This adds a 3D effect to the current text or brush. There are two

colour squares in this box which can be changed in the same way as changing the outline or shadow colour.

MOVE: When you want to move a line of text or a brush around the page, click on the MOVE button. You can now click on any part of the page and by holding down the left mouse button you can drag the text or brush around the page. When you have finished, press the right mouse button to get the main control panel back.

FONT: The current font is displayed in this box. By clicking on it, you can change the font of the current line. A font requester will appear where you can select any font in the current font directory.

JUSTIFY: There are three buttons to justify the current line of text or brush. From left to right there are: left justify, centre, and right justify.

STYLE: By clicking on these buttons you can change the style of the current line. The styles are: underline, bold, and italic.

LAYOUT: Click on this button to go to the layout menu. Here you can fine tune the current page, line by line. The options in the middle of the panel can be scrolled down to reveal more options. Use the slider bar to the right to do this. The arrows on the left control the direction of the shadow or 3D effect.

SHOW: This will show a preview of the current page including all line effects.

BRUSH: You can add an IFF brush (ie. a DPaint brush) anytime you like by clicking on this button. A file requester will appear for you to select which brush to load.

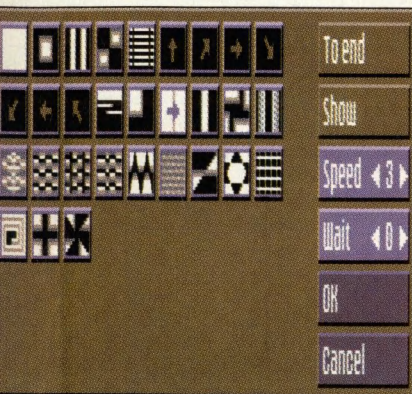
PALETTE: The palette can be changed manually by clicking on the palette button. A new menu will appear from which you can choose any of the Amiga's 4096 colours to use on your page.

OK: Click on OK when you have finished your page. This will save your current page in the Amiga's memory.





CANCEL: Only select CANCEL if you want to abandon the current page. This will return you to the main menu.



When you are in the editor, you can position your cursor on the page by clicking with your left mouse button. Use the keyboard to type in a few lines of text and press RETURN for a new line. The right mouse button toggles the control panel on and off the screen. When you have finished typing your lines, move your cursor onto any line with your cursor keys or mouse. Try selecting different effects from the control panel such as out-line or 3D.

If you are twitching for some action then move your cursor on to any line of the text. Now click on the empty square button, just above the SHOW button, on the left of the control panel. The line effects menu will appear. Here you can choose any one of the line effects shown on the screen. The speed of the effect can be altered by clicking on the speed arrows. 1 is the slowest and 10 is the fastest.

You can preview any effect by clicking on SHOW. Select OK from the line effect panel when you have finished. Try giving the other lines of text various effects. You can also give pages special effects. This is done from the main menu by clicking on

the corresponding blank button, on the right of the screen. Feel free to experiment as much as you like with Scala 500. There are a few functions I haven't mentioned, so it's up to you to find them! Have fun!

Virus Checker 6.0

Virus Checker 6.0 is the latest version and the one and only virus busting program you need. To run it, double click on its icon. If you have Workbench 2.0 then you can gain greater control over the program by copying it to your workbench disk. Please read the document on the disk for full instructions.

Remap Info 1.1

Remap Info will toggle the colours of an icon from Workbench 1.3 to 2.0 and vice-versa. Workbench 2 owners can double click on its icon to get it running. To change an icon, drag it over the Remap Info icon that appears on your Workbench screen. Workbench 1.3 owners can use it by clicking on Remap Info once and holding down SHIFT. Then, double click on the icon you want to change. Easy!

February Superdisk Made Easy!

If you had trouble unarchiving the utilities from the February Userdisk then try this: Make a copy of the February disk and rename the copy to UTILS. Then, boot from this month's Userdisk and open the CLI window from Workbench. Type in these two words:

execute feb (PRESS RETURN)

Follow any prompts the computer gives you and in 10 minutes you will have an autobooting disk full of exciting utilities!

Faulty Disk?

In the event that your disk fails to load, please return it to the address below for a free of charge replacement, and allow 28 days for delivery:

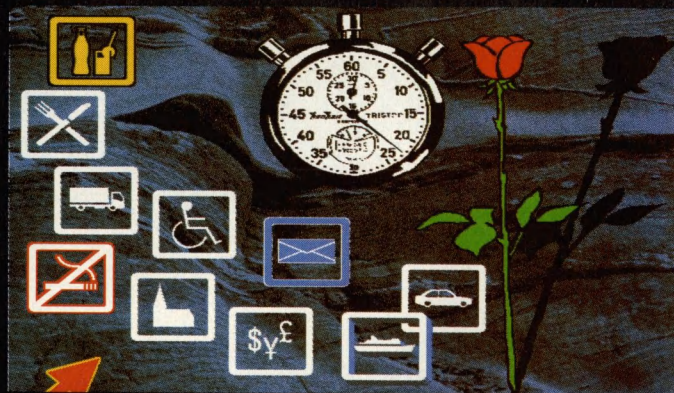
AUI FAULTY DISK RETURNS, TIB PLC., 36-50 Adelaide Street, Bradford, BD5 0EA.

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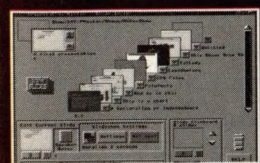
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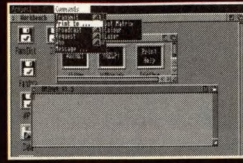
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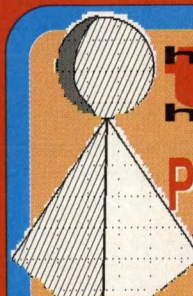
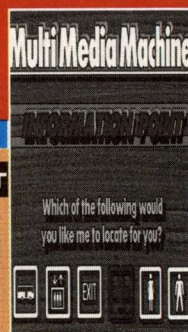
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Master**

p16



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p98

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July 1992 Vol6 No 7

Caligari

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p43



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p58

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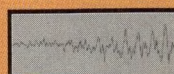
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p10

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p60

HOT NEWS

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X-CAD X3

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of
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and on

16 bit show
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seeing is believing

**Next month, with the
May issue of AUI, things
ain't going to be what
they used to be.**

We have been examining the whole of the magazine in the light of the ideas that have emerged from our recent readers' survey. You gave us plenty of interesting comments and indications of the magazine you wanted to have and we have taken them to heart. So you will see the May AUI with plenty of changes.

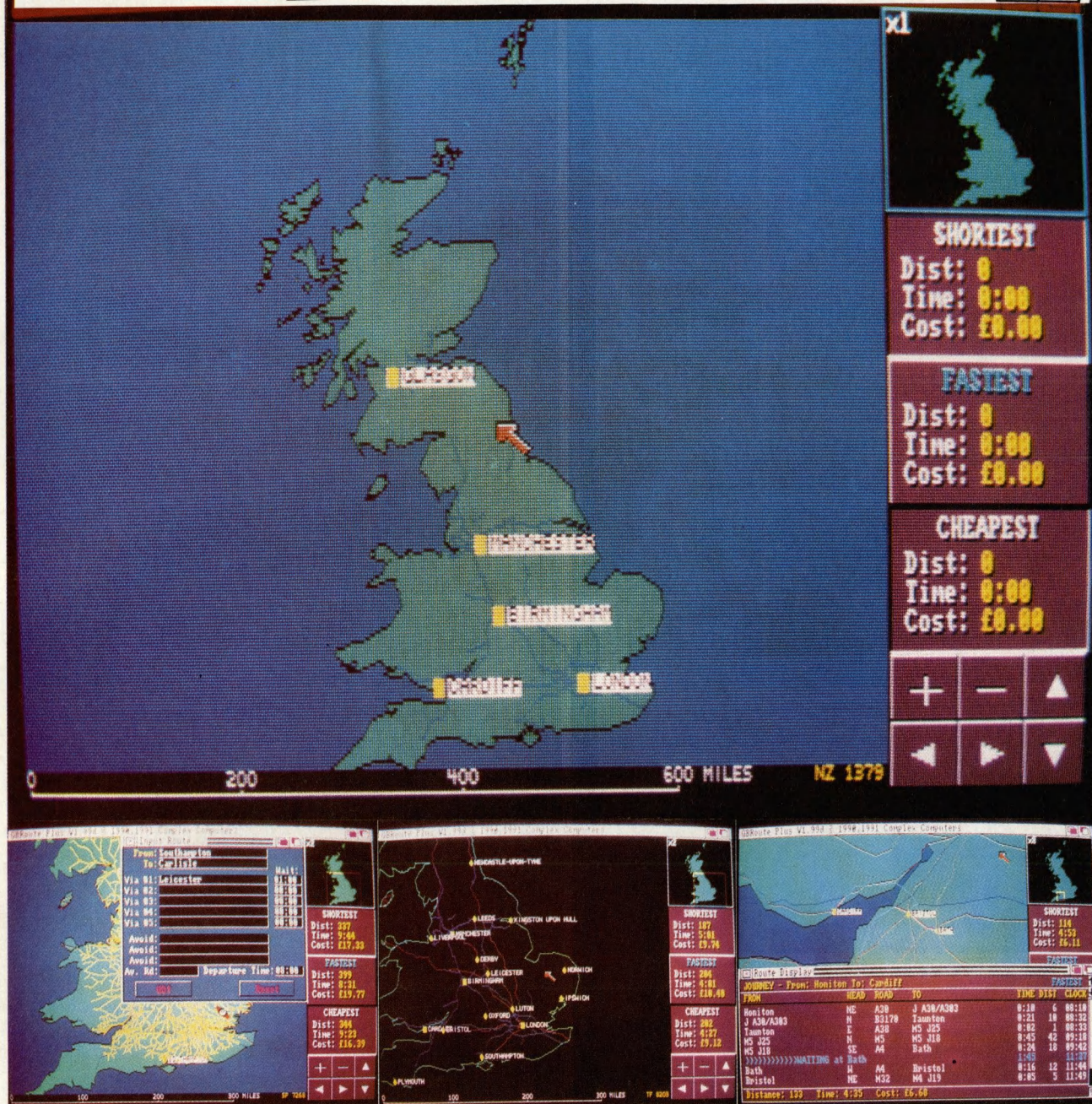
For a start, the look of the magazine will be different. When you go to your newsagent watch out for an AUI cover like the one you can see here. Very different..

When you pick up the May AUI and read it you will find there are lots of lively new ideas...which you the readers have told us you want.

We are sure you will like the new Amiga User International even more than the old.

Don't miss it next month on your newsagent's shelves.





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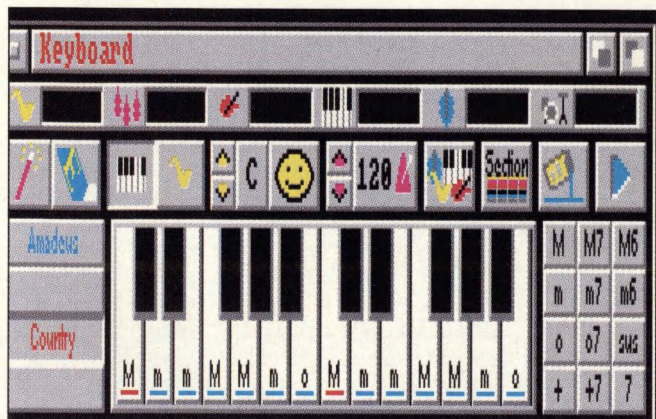
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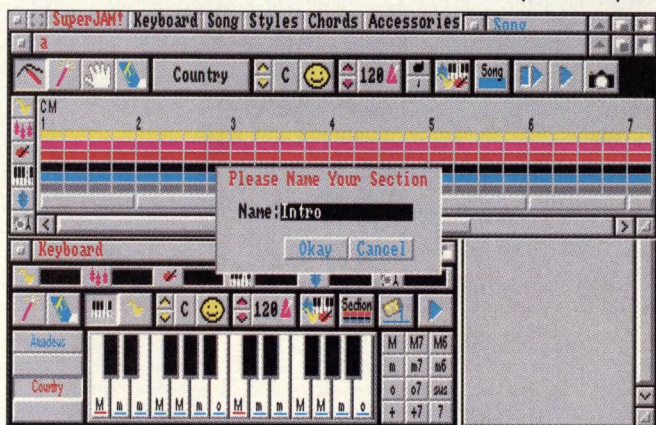
Paul Overaa discovers that SuperJAM, a low-price high achieving new music package from Blue Ribbon SoundWorks could knock the existing music packages on any computer for six...

TEST DRIVE

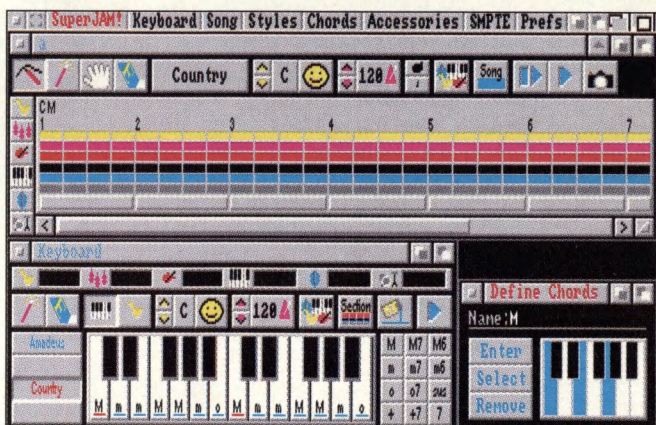
SUPERJAM



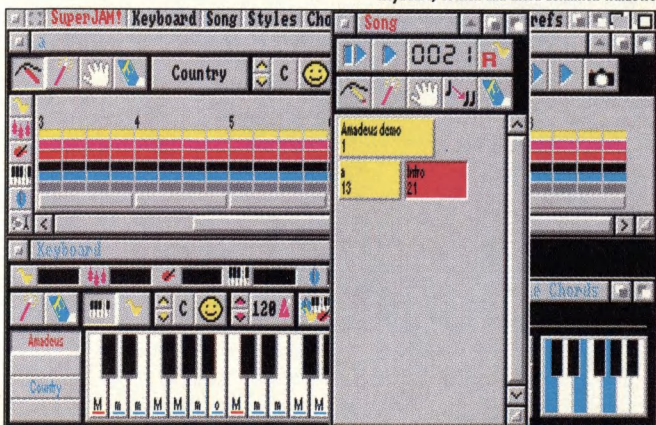
SuperJAM's startup screen



Section creation!



Keyboard, section and chord definition windows



Sections are linked to create songs

SuperJAM, Blue Ribbon SoundWork's new Amiga program, knocks the hitherto dominant Atari ST opposition for six and provides yet more evidence that the Amiga is now making substantial progress in the MIDI/music arena.

SuperJAM is a brilliantly conceived, powerful, program but despite its sophistication it will run quite happily on anything from a basic 1Meg Amiga A500 running WorkBench 1.3 upwards. The package itself contains three disks (program, extras and a TurboSound instruments/samples disk), and an A5 ring-binder manual.

SuperJAM has a great many facilities and, as might be expected, its manual is quite hefty - almost two hundred pages! Luckily it has been well planned and by providing tutorials most people, whether they are musicians or not, will be seeing something of SuperJAM's capabilities within less than fifteen minutes of opening the package. The SuperJAM manual talks about its silicon musicians as 'The Band' and this is analogy is particularly apt because the main job of the SuperJAM user is to act as conductor/arranger who guides the SuperJAM musicians along.

With SuperJAM installed, you double click on the SuperJAM icon within WorkBench and are presented with the startup screen. At the top of this screen is a strip of buttons. On the far left is a SuperJAM button which allows new projects to be created and existing projects to be loaded and saved. The other buttons give access to keyboard, song-style, chords, accessories, SMPTE and Preferences windows - in a sense these buttons provide permanently accessible routes into the main SuperJAM program facilities.

By default SuperJAM assumes that you aren't using MIDI equipment and on loading it sets you up to play TurboSound instruments (which I'll talk about later). A keyboard window will already have been opened and immediately to the left of this window's on-screen piano style keyboard you find four buttons which are used to identify various musical styles (country, reggae and so on). Click on a style, hit the 'Play' gadget and SuperJAM actually starts making music.

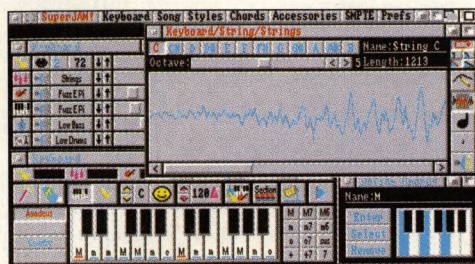
It is in fact playing in the key of C major and what it needs from the user at this time is a bit of direction. The keyboard window include gadgets for key selection and tempo (speed) and there is a happy/sad face gadget that toggles between major and minor keys. Having picked a key, and set a suitable tempo, all that you now have to do is give SuperJAM's 'Band' (which can incidentally contain up to six different instruments) some guidance as to which chords to play...

TEST DRIVE

SUPERJAM

C O N T I N U E D

One way of doing this is to click on various notes of the on-screen piano keyboard. The roots of important chords in the chosen scale are underlined so if you have no idea which notes will sound OK, just keep to the underlined ones. As you



Brilliant editing facilities

touch the notes SuperJAM drags your efforts into time and adjusts the backing to suit. At this point it is playing bass, drums, piano, guitar, and perhaps another couple of instruments as well... even though all you are playing is a sort of one finger melody.

Style, tempo and key can all be changed in real-time (i.e. as you are playing) and SuperJAM will both continue to play and keep in time. SuperJAM does in fact create subtle variations of its own as it plays but if you want a particular fill or emphasis at a certain point in the song then a 'fill' gadget is provided which does the honours.

The on-screen keyboard isn't the only way to 'conduct' SuperJAM. You can use the Amiga's keyboard and, if you have MIDI equipment connected, SuperJAM can also track root notes from the low end of the MIDI keyboard and use them as a guide when creating its accompaniment. SuperJAM has both solo and chord based modes and uses the same type of gadget-based arrangements that the Bars&Pipes sequencer adopts (including magic wand, pencil, and eraser gadgets).

The keyboard window also has a keyboard configuration icon and this causes a small window to open that provides details of the instruments in use.

You use this window to switch the various members of 'The Band' between MIDI and internal sounds, set relative volume levels, insert MIDI channels and patch numbers and generally adjust the SuperJAM band parameters to suit your needs. You can mix MIDI output with the use of internal sounds and can incidentally also transpose individual parts up or down by one or more octaves (in my pre-release copy these gadgets did however seemed to stick occasionally).

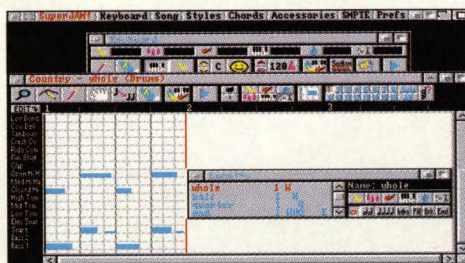
In effect then SuperJAM provides a six-membered band that, guided by the user, can turn simple one finger melodies

into complete arrangements. Now all this may sound impressive but the particular scenario I have just described is actually one of the simpler tasks which SuperJAM can perform.

It was however worth mentioning because it illustrates just how easy the program is to use when you are sticking to its default settings.

If you are further down the music road and know about major and minor keys, major and minor 6ths and 7ths chords and so on, you'll realize that as you pick a key for your music SuperJAM places the basic triads of the associated key on the appropriate on-screen piano key notes. With the default C major scale you get C major, D minor, E minor, F major G major etc., but it is possible to adjust the jamming characteristics of SuperJAM by forcing other chords to be associated with particular notes. Competent musicians will in fact find that, as far as chord construction is concerned there is little they cannot do!

On the right hand side of the keyboard window there is a set of chords types (to hear what they sound like you can click on



Creating a drum pattern

rather than D minor. You can select the major chord (designated M), drag it over and place it on the on-screen keyboard's D note and bingo... the note gets labelled with the appropriate chord type and now when SuperJam decides on playing a D related chord it will use D major rather than its default choice of D minor.

If you want to use a chord that isn't specified in the default set, say a strange inversion of a 7th with a flattened 9th and 13th, then SuperJAM has extra windows which allow you to create them. It also has options for creating chords on all notes of a scale and for using four notes 7th chords instead of triads.

When You Get Tired Of Real-Time Jamming...

Despite the fact that SuperJAM is great for impromptu jamming sessions there comes a time when you want to create something more permanent.

SuperJAM works much the same way as a real musician and it allows songs to be created by linking shorter sections of music together. Within the Keyboard window you'll find a gadget called 'Section' and this, when hit, causes the program to ask for a section name and a length. You can enter anything but the idea of course is that you create introductions, verses, choruses etc., ie use names that relate to meaningful sections of music.

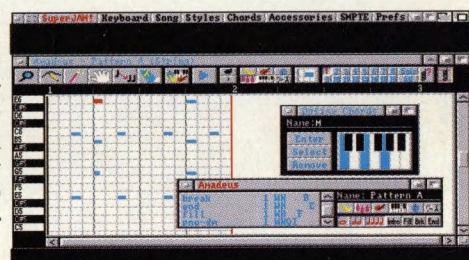
When creating a section SuperJAM opens an absolutely brilliantly designed,

scrollable, window which contains six horizontal rows of coloured gadgets (these correspond to the six instruments that SuperJAM uses) divided into bars. Individual instrument parts and whole bars can be muted but by far the most interesting area of this display is the bit which initially has nothing in it at all...

Above the coloured instrument bar content gadgets is some blank space.

Point to the space above the start of the first bar and click the left mouse button... a mini-keyboard appears from this you can pick the root note of a chord. You can also add less obvious chords from another SuperJAM click-and-it-will-appear type menu and you can enter chords in real-time using root notes from the on-screen keys or from a MIDI keyboard!

If you click slightly below the chord symbol line another magic SuperJAM menu appears only this time it lets you add intros, fills, breaks and ends and the net result is that by using the mouse SuperJAM will let you build up a complete section of music (in a particular style) which contains all the key, chords, break and fill details that SuperJAM needs to play the section. If you want to remove a chord just click on the section window's erase gadget and then touch the chord you want to remove - it will vanish leaving everything else intact. If you put a chord in the wrong place SuperJAM has a special 'hand-shaped' object movement gadget - select it and the SuperJAM pointer turns into a hand which allows you to shift



More pattern editing

things around. To move a chord, or a fill/break type directive, just point to the item, select it by pressing the left mouse button, and move it to where it ought to be.

If you decide that you want to change the key of a section whilst creating it, just use the up/down key gadgets and all your existing work will be transposed to the newly selected key. You'll find a lot of gadgets in the section window that are also present in the keyboard and other windows so despite the fact that a lot of facilities are available they do not take that long to come to terms with because of the consistent way in which commonly needed changes are carried out.

Having created a section of music, or whilst creating it, you can use the section window's start/stop button to play it. SuperJAM will (optionally) count you in and then play your section much as before only from the section window it is using your chord/guideline plan rather than any real-time keyboard improvisations. As it plays the section however SuperJAM will

"The advantage is that even a basic Amiga can cope with the six instruments that SuperJAM needs"

be creating its own subtle variations on what has been written.

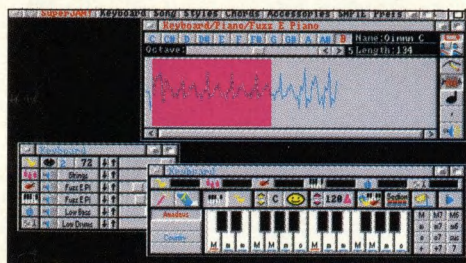
Each verse, chorus, bridge passage and so on, that is created is given its own section window. Furthermore these sections have their own set of key, tempo and instrument assignment parameters (entered through the same types of window as was used when selecting the real-time jamming parameters discussed earlier).

As the various sections of a song are prepared SuperJAM is actually collating them into a larger unit, a song which can be viewed by clicking on either the song gadgets present in any of the section windows or the song gadget in SuperJAM's main menu strip. Since it lets you copy section blocks, move them around, duplicate them or delete them it becomes possible to reshape the overall format of the song in any way that you want.

Create intro, verse, chorus, and end sections... and then use the song window to turn those three sections into a song which includes half a dozen verses and choruses. When the final arrangement is played the various sections light up as they are used.

TurboSound Technology...

The conventional four voices on the Amiga aren't enough for the SuperJAM 'band'. With SuperJAM playing bass, drums, piano, guitar, strings and perhaps a melody as well the usual method



TurboSound editing

of handling the Amiga's sound facilities become a non-starter.

To get around this limitation SuperJAM uses something called TurboSound technology which involves mixing samples of certain instruments together and playing them using just a single audio channel. The advantage is that even a basic Amiga can cope with the six instruments that SuperJAM needs and with an accelerator board the TurboSound scheme allows up to sixteen different instruments to play.

Everything however has a price and the disadvantage with TurboSound is its need to use separate samples for each note in the octave. This means that TurboSounds can eat up memory very quickly. Nevertheless, SuperJAM's TurboSound facilities are quite impressive and include an editor which can both convert IFF samples to TurboSound format and edit the samples - sample tuning, loop point adjustment, special effects and all the usual sample editing facilities are provided.

In addition to creating and using TurboSound instruments (a disk full of ready-made instruments is provided with the SuperJAM package) it is also possible to create 'TurboSamples' which can be played either from within SuperJAM or from a stand-alone external program (or via ARexx). In effect a TurboSample is a digital recording of a SuperJAM internal-sounds performance and this is likely to find many useful applications amongst the Amiga's internal-sound orientated musical community.

These TurboSound and TurboSample facilities are very processor intensive and with a low processor speed you will not be able to achieve high-quality audio while composing in real-time. There are a number of things which may be done to ease the burden on the processor and discussions of these are provided in the SuperJAM manual.

SuperJAM and MIDI...

Although TurboSound technology offers you the opportunity to create multi-timbral arrangements on the Amiga it cannot compare in sound quality with even the least expensive

MIDI equipment. (The Amiga's sound architecture is based on 8-bit samples whilst most MIDI equipment uses the more modern 16-bit technology.) Another benefit of MIDI use is that it does not put pressure on the Amiga - all of the sound generation work is done externally (by the MIDI equipment itself) so SuperJAM is relieved of the responsibility of having to perform real-time sample processing.

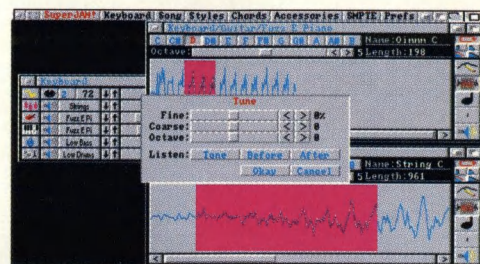
The instrument/band setting up windows associated with real-time keyboard use, song section creation etc., can all have individual MIDI parameters assigned to them; each member of the band in any section can therefore have their own channel numbers, program change commands (or named patches), MIDI volume settings and even volume to velocity mapping characteristics.

It is not until you hear what SuperJAM can do via MIDI that you begin to realize exactly how powerful this program is. A competent musician can sketch out the chords and sections of a song and have SuperJAM generate the bulk of the music. The performance can be saved as a MIDI file, or recorded by a sequencer in real-time, and of course from here any number of editing/overlay jobs can be performed. In many cases complete, professional sounding, arrangements can be produced within 15 minutes or so.

Any niggles? Very few... at the moment SuperJAM always sends a patch (program change) commands for all MIDI

"Blue Ribbon SoundWorks have done some superb programming"

assigned instruments and there is no disabling 'null setting' and I found this a little inconvenient (drum machines for instance do not need such messages because SuperJAM is creating its own drum patterns not specifying patterns already in the external unit). My pre-release review version did have a minor snag in that the MIDI time-clock sync options did not work as described in the manual. Relative to the overall workings of SuperJAM this 'glitch' (which you often see in pre-release copies) is small and, since I've been told that a number of such problems are already fixed in the final release, they should not overly concern



More TurboSound editing!

the potential SuperJAM user.

Putting on The Style..

SuperJAM comes with a collection of over thirty different music styles and can play country, classical, pop, rock, funk, reggae and even jazz orientated compositions. Even if it were only possible to create music in these pre-defined styles SuperJAM would be a good investment but SuperJAM is actually open ended in this respect because it is possible for the advanced user to create their own styles.

Conclusion

SuperJAM's music sounds good and even if you are already a competent musician you are going to find that, in many cases, SuperJAM is likely to out-perform you.

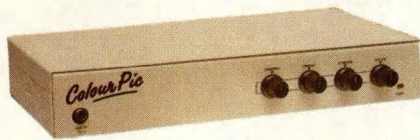
As usual with these heavyweight programs there are quite a few facilities which we haven't had the space to deal with. For both MIDI and internal sound use, SuperJAM ran quite happily within 1 Meg and, despite the odd 'low memory' warnings, would continue to do so for a lot of applications.

Despite the couple of teething problems mentioned earlier SuperJAM has made a lasting impression and I wouldn't hesitate to recommend its use. The package has so much potential that I really did expect it to have a heavyweight price tag. Surprisingly it hasn't - SuperJAM costs just £99 and at this price it is an absolute must for ALL Amiga owners with an interest in music.

Blue Ribbon SoundWorks have done some superb programming and have produced one of the most innovative music products that I've ever seen. It is programs like SuperJAM which are going to make the musicians who have been watching the Amiga's progress in the MIDI/music world realize that it is only a matter of time before the Amiga topples the Atari ST from its spot as the number 1 affordable MIDI/music machine.

"In many cases complete, professional sounding, arrangements can be produced within 15 minutes or so."

ColourPic NEW!



ColourPic is JCL's best selling video digitiser. Grabbing frames from a live video source in 64,000 vibrant colours is simplicity itself. If you have struggled with a colour wheel or splitter and have had to limit your video digitising to static objects or just monochrome, you will find ColourPic pure joy. ColourPic has its own built-in 64,000 colour framestore which is constantly digitising the incoming picture in REAL-TIME. Just press a key to freeze the picture and import it into the Amiga. It couldn't be easier!

NEW! ColourPic has been upgraded to include a S-VHS (Y-C) input and is now shipped with 'Cabaret' our comprehensive 24-bit image processing software in addition to the standard ColourPic software.

- * ColourPic can capture lo-res, interlace or hi-res images and convert them to HAM, 32 colour, 16 colour and monochrome IFF files.
- * ColourPic has RGB, composite and UHF TV outputs from its framestore to drive a second monitor.
- * ColourPic works with all Amiga computers, even the A500P.
- * ColourPic can be upgraded to ColourPic AniMate.
- * ColourPic has comprehensive monochrome image processing tools.
- * ColourPic is shipped with Cabaret 24-bit image processing software.

ColourPic RRP £499 inc VAT
ColourPic AniMate RRP £599 inc VAT

SuperPic



SuperPic is a framegrabber and genlock in one box! It is the perfect answer to anyone who needs all the facilities of real-time colour video digitising and the ability to combine computer generated graphics with a video source. SuperPic has a built-in 64,000 colour framestore which is constantly digitising the incoming video source in real-time. Just press a key to freeze the picture and import it into the Amiga. It just couldn't be easier! The genlock built-in to SuperPic has an RGB output for the finest possible results in addition to composite output and provides the Amiga user with a very stable product, ideal for titling.

NEW! SuperPic is now shipped with 'Cabaret' our comprehensive 24-bit image processing software in addition to the standard SuperPic software and a three button optical mouse with mat.

- * SuperPic can capture lo-res, interlace or hi-res images and convert them to HAM, 32 colour, 16 colour and monochrome IFF files.
- * SuperPic can be upgraded to SuperPic AniMate.
- * SuperPic has its own built-in genlock for combining computer generated graphics with a video picture - ideal for titling.
- * SuperPic allows you to switch between Amiga display, framestore and video outputs on your standard RGB monitor at the touch of a button.
- * SuperPic is shipped with Cabaret 24-bit image processing software.

SuperPic RRP £599 inc VAT
SuperPic AniMate RRP £699 inc VAT

ColourPic Plus NEW!



ColourPic Plus, JCL's latest addition to their Amiga real-time colour video digitiser range, brings you the most powerful digitiser available to the Amiga user in its price range. A professional machine engineered to the highest standards and using the latest technology, ColourPic Plus combines all the features present in ColourPic with AniMate as standard and an impressive number of new features and new software.

The Impossible? - ColourPic Plus can do it! Combine a framestore picture in 64,000 colours with text on an Amiga database display - without a genlock! With the optional 'GrabIt' software from JCL and a prepared database control language module you can add pictures to your personnel file or parts list. Your database pictures could even be animated!

- * ColourPic Plus can capture lo-res, interlace, hi-res or hi-res with interlace images and convert them to HAM, 32 colour, 16 colour and monochrome IFF files.
- * ColourPic Plus is shipped with 512K RAM and can be upgraded to 1MB for more animation frames and even higher resolution modes.
- * ColourPic Plus can switch between your Amiga display and the 64,000 colour framestore picture at the press of a key.
- * ColourPic Plus has S-VHS (Y-C), RGB and composite inputs and provides RGB, composite and UHF TV outputs for an extra monitor if required.
- * ColourPic Plus is shipped with Cabaret Plus 24-bit image processing software.

ColourPic Plus RRP £699 inc VAT

AniMate

AniMate, for ColourPic and SuperPic, adds a whole new dimension to video digitising - colour animation. The complete AniMate package upgrades the digitiser to 512K RAM using a special RAM expansion card with time marker control logic and includes control software and manual. AniMate provides a

simple and complete method of producing short sequence colour animated images on an Amiga, where the images come from live video such as a camera or a VCR. Simply point a camera at a moving object, select ANIM RECORD/SEQUENCE and press the space bar to capture a series of real life movements.

- * ANIM SET options include frame delay and first field hold off.
- * ANIM RECORD options include sequence record and single step record.
- * Select ANIM PLAY/CYCLE and the recorded sequence is repeated.
- * ANIM PLAY options include sequence, single step, mouse scroll, cycle and ping-pong.
- * Sequences recorded from a VCR may be joined together to produce ANIM files.
- * The interval between recorded fields can be set at any number of fields.
- * The individual fields of an animation may be examined by using the up/down movement of a joystick.
- * Fields from an animation sequence may be converted to standard Amiga IFF format and then built into an ANIM format file for replay.

Upgrade your ColourPic or SuperPic for £150 inc VAT

Cabaret

CABARET the image processing package shipped with ColourPic and SuperPic provides image import facilities together with colour and monochrome image processing functions to modify existing pictures. Cabaret has a wide range of filter and masking options to enhance pictures and produce interesting effects.

- * Cabaret will import and display HAM, EHB, 32, 16, 8 and 4 colour pictures plus Monochrome and Threshold images in normal and overscan modes.
- * Cabaret will SAVE and LOAD images in standard IFF format, plus a wide range of other formats including TARGA and AIM.
- * Cabaret will produce X & Y flips, mirror images, multiple images, magnified parts of an image and control colour balance, contrast and brightness.
- * Cabaret works on all Amigas with 1 MByte or more of memory.

CABARET PLUS software, which needs 3 MByte of memory to make full use of all facilities, has all the features of Cabaret - PLUS

- * Extra filters including Uniform, Kuwahara, Posterize, Median and Gamma.
- * New features including Emboss, Dropshadow and Combine.
- * Interlace and hi-res modes AND Save in 24-bit IFF!

For the user with less than 3 MByte of memory the Cabaret functions may be used without the 'Plus' features.

Cabaret RRP £29.95 inc VAT Cabaret Plus RRP £89.95 inc VAT

ColourPic, SuperPic and ColourPic Plus are available from selected dealers or direct from JCL.

** GOLD DEALERS AND STOCKISTS! **

Trilogic
253 New Works Road
Low Moor
Bradford
BD12 0QP
Tel: 0274 691115

Computer Care South Ltd
499 Oxford Road
Reading
Berks
RG3 1HQ
Tel: 0734 393615

Gordon Harwood Computers
New Street
Alfreton
Derbyshire
DE5 7BP
Tel: 0773 836781

Ultima
First Floor
White Lion Walk
Guildford
Surrey, GU1 3DW
Tel: 0483 506939

Videoquip
5 Fosse Road South
Leicester
LE3 0LP
Tel: 0533 558818

Silica Systems
1-4 The Mews
Hatherley Road
Sidcup
Kent, DA14 4DX
Tel: 081 302 8811



About our framestore. . .

All of JCL's video digitisers can grab a frame from a live video source in 1/25th of a second using a 64,000 colour framestore which is constantly digitising the incoming picture in real-time. The framestore displays a picture of such high quality that you may suspect you are looking at a straight through connection from the video input, but don't be deceived, this is a digital picture, just press the Z key to see it freeze! The framestore's 64,000 colour palette can be used to display previously digitised images stored on a disk as well as show Sculpt (and other) images in a much wider range of colours than the Amiga's HAM mode. The effect is stunning!


For your free show disk of pictures:-
Contact Carolyn on 0892 518181.



JCL BUSINESS SYSTEMS LTD.

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Tel 0892 518181 Int +44 892 518181 Fax: 0892 511772 Int +44 892 511772



The background of the page features a golden, stylized figure, possibly a knight or warrior, wearing a helmet with a flame-like crest. The figure is holding a sword that is positioned diagonally across the frame. The sword's blade is inscribed with the word "PROFANE" in a bold, sans-serif font. To the right of the figure is a large, red, cylindrical object. The overall aesthetic is high-contrast and dramatic, typical of 1990s computer graphics.

The Amiga, more than any other computer that is accessible to the home user, has become an engine for creating professional quality graphics. A few years ago the programs today available to the Amiga user would have been beyond the means, even the dreams, of those working on feature films. Now the Amiga offers even greater scope for the artistic imagination. In this special supplement, "In Vision" we are covering some of the multiple aspects of Amiga graphics that are, for many users, its major attraction and for others the source of their income. There are so many dazzling areas of graphics on the Amiga that we could present to you that we are forced to make this only the first part of "In Vision. Next month we shall continue with some even more amazing examples of what the Amiga can do. You won't believe your eyes!

In Vision!

TEST DRIVE

Scala

These days presentation is everything, particularly in the video industry. Gary Fenton speaks his mind about Digital Vision's legendary Scala presentation and titling packages, which now include a special cut down version for the A500.

There are many titling packages available for the Amiga designed to fit everyone's pockets. The trouble is that the best ones cost the most and it leaves the hardened video enthusiast to search around for a cheaper option. Luckily, Scala comes in two sizes. The first is for the professional pocket and the second had been designed to fit the typical A500 budget. Both versions are essentially the same, but I'll be splitting them apart later on.

Interfacing

The thing that struck me the most about Scala was that it is very easy to get to grips with. The interface with the outside world is extremely user-friendly which makes the user more confident to experiment. The requesters and other on-screen information are displayed in pleasing colours with a large size font. All of the operations work on a point and click basis with optional hotkeys for advanced users.

"Scala comes on a whopping 8 disks containing background graphics, clip art symbols and a wealthy selection of attractive fonts."

The file requesters have been custom made for Scala and work very well. The whole appearance of Scala looks so clean and simple with big buttons to click on and absolutely no technical formalities with which to struggle.

What does Scala do then?

In its simplest form, Scala can be used to put titles and captions onto video tape. The idea behind Scala is so flexible it can

be used for many multi-media purposes too. The interactive feature lets the user define buttons into his/her own presentation scripts. When a button is selected (by clicking on it) Scala will jump to a predetermined screen. Uses can be extended to information and educational purposes.

A "script" is a program that Scala writes as you design your presentation. You need never know about the script until you save it or load a new one in to Scala. Advanced users can load scripts into text editors

to make fine adjustments or write one from scratch.

Scala comes on a whopping 8 disks containing background graphics, clip art symbols and a wealthy selection of attractive fonts. You can use the background screens that come with Scala or create your own in DPaint, likewise the clip art symbols. Scala will also play back DPaint animation which can add a lot of impact to a presentation. The chunky manual that accompanies both Scala packages is very well written in plain (non techie) English.

Scala offers many special line and screen effects, numbering 48 and 56 re-



ABOVE: The page effects menu.



A title sequence in the making.

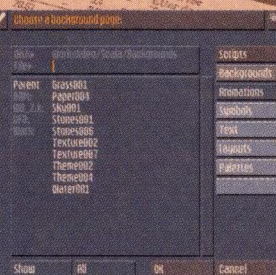


spectively. The effects can be used to determine how the page or line appears and disappears on and off of the screen. Because there are so many effects to choose from, it gives large scope for creativity and originality. (Although Digital Vision can still learn a thing or two from Broadcast Titler 2.)

Typing Pretty

Creating a new page is very simple indeed. Selecting the NEW option will ask you to select a background screen. If you select OK without choosing a background Scala will give you a blank screen and ask you what resolution you want, how many colours and an option for 2 levels of overscan. A blank screen is ideal for genlocking captions over video.

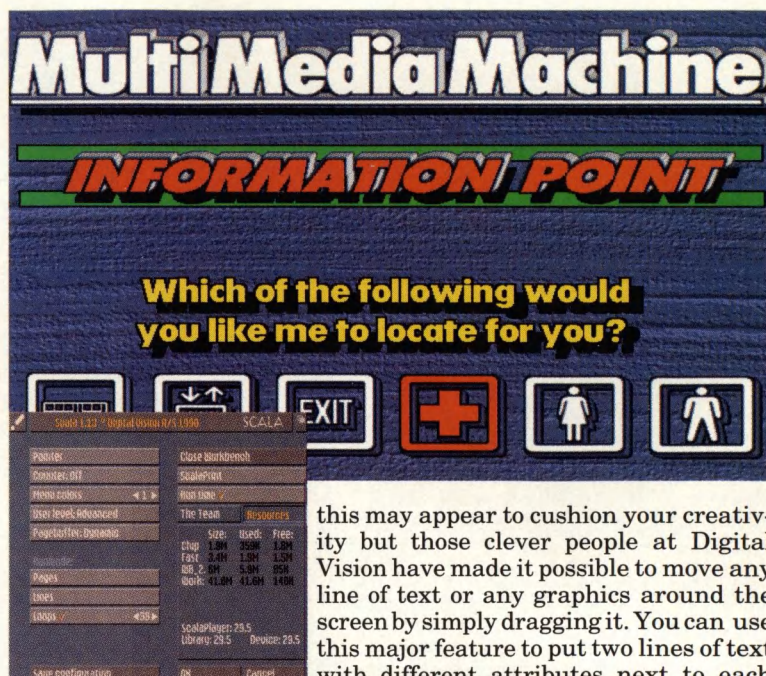
When the screen opens, Scala produces a control panel at the very bottom of the screen. It is from here that you can select various fonts, text and line effects, and all the other attributes that you want to give to this page. (In Scala, each screen you create is called a page which can be placed in any order you want, like loose pages in a book.)



Putting text on the page is as easy as typing it out. The control panel can be removed by clicking your right mouse button or is automatically removed for you when your cursor gets to the bottom of the page.

"Because there are so many effects to choose from, it gives large scope for creativity and originality."

The first thing you may want to do to your text is to alter the font. This is done by clicking on the current font name which brings up a font selection panel. All of the text on one line must have the same attributes. This means that if the first word is coloured blue in a bold Futura 36 font, the rest of the line automatically has the same colour and font. At a first glance



TOP LEFT: The Channel 4 Daily would be well pleased with this.
 TOP RIGHT: Scala could be used at airports or stations with interactive buttons, perhaps?
 ABOVE LEFT: Scala's load requester.
 ABOVE RIGHT: The system information and preference menu.

this may appear to cushion your creativity but those clever people at Digital Vision have made it possible to move any line of text or any graphics around the screen by simply dragging it. You can use this major feature to put two lines of text with different attributes next to each other, on the same line. It is sometimes easier to type your text first and then move it around the screen, arranging it into an attractive layout. Further more, sections of the page can be move by drawing a lasso box around the area you want to move.

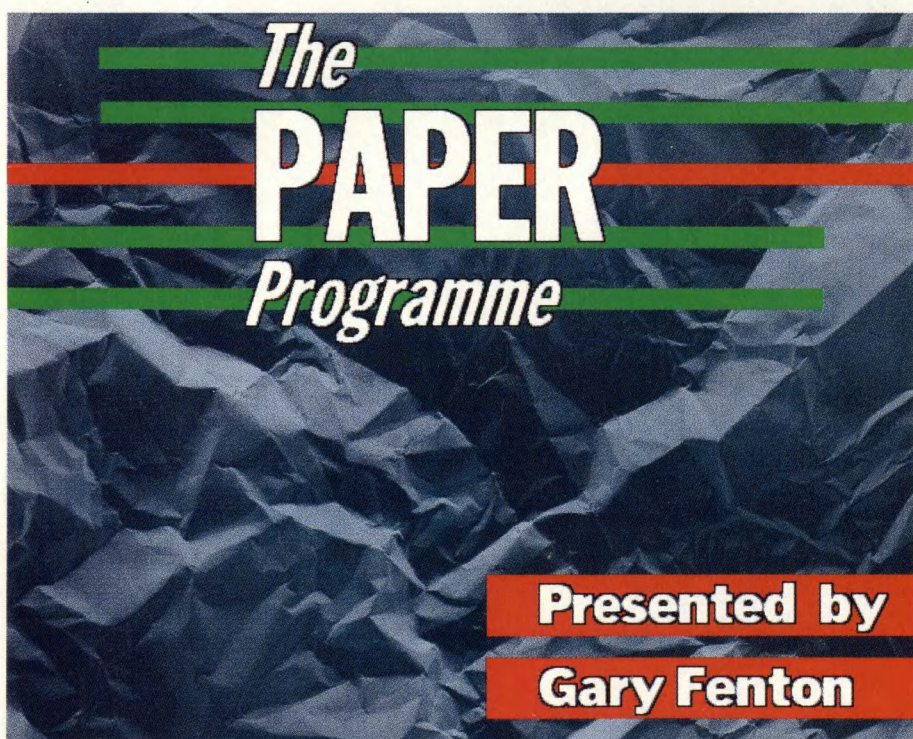
Scala offers complete palette control with RGB sliders and the regular "spread to" and "copy colour" features. Colour settings can be saved to form your own database of palettes. Scala 1.13 includes dozens of preset colour schemes on the disk set which can vividly change the appearance of your backgrounds.

Once you have chosen an appropriate font and size you can then decide whether you should use any of the other text effects. These include a coloured outline, a shadow, a 3D effect, bold, italics, underline and justification. The colours for the 3D, shadow and outline effect can be chosen from the palette which stretches along the top of the control panel. If any of the attributes is not to your liking you should immediately proceed to the layout option screen.

The layout screen gives you many options to fine tune the attributes of the current line. Shadow length, outline thickness, letter and line spacing together with 3 anti-aliasing levels are just some of the available options to fiddle with. The highest setting on the anti-alias option gives you text so smooth that it puts the professional Aston 3 caption generator to shame. I propose that all production companies that still use the Aston 3 should sell it and buy an Amiga 2000 with Scala and spend the rest of the money on a holiday to EuroDisney!

Effortless Effects

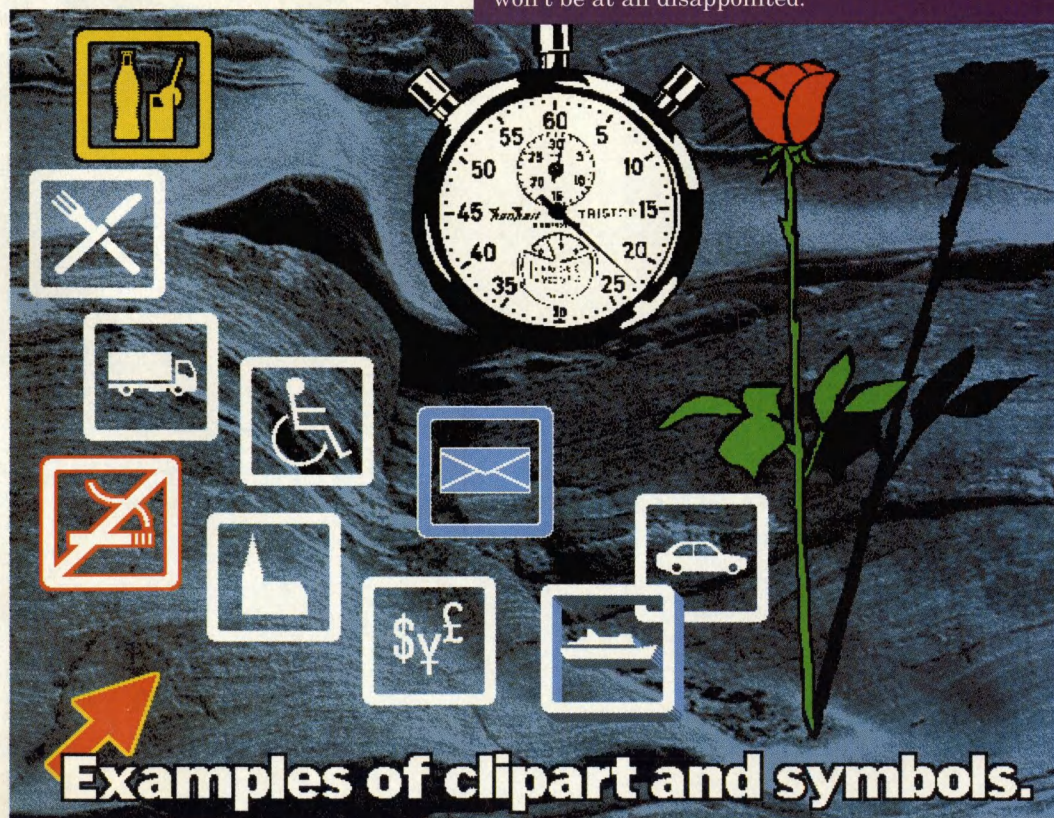
Effects can be assigned to any line by clicking on the effects button. This brings up a menu of 48 effects ranging from scroll on variations to reveal and appear mutations. The speed at which these effects happen can be controlled to 10 levels



Scala

C O N T I N U E D

Scala is the most creative and user-friendly titling and presentation package I have come across. It's simplicity and large buttons on the control panels are almost child-like in appearance. Just looking at the buttons is enough to tempt you to start clicking on them. While I am singing its praises, I must point out that the scrolling of text is not at all smooth.



A Creative Audio Visual Production



Product: Scala 1.13
Price: £225.00 plus VAT
Product: Scala A500
Price: £99.95 inc VAT
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Phone: 081 309 1111
Contact: HB Marketing
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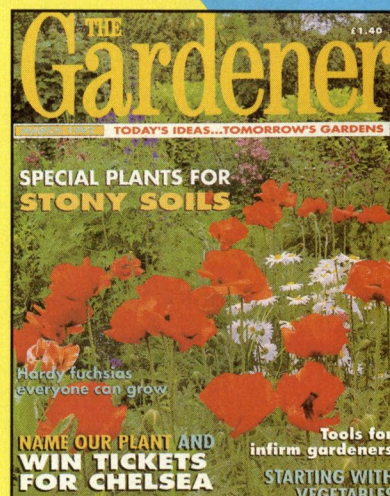
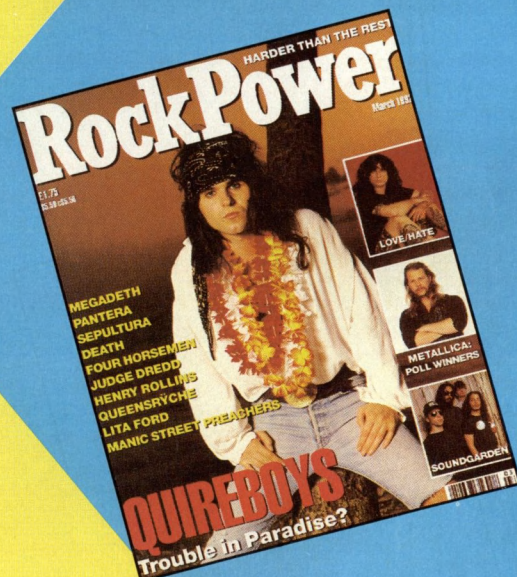
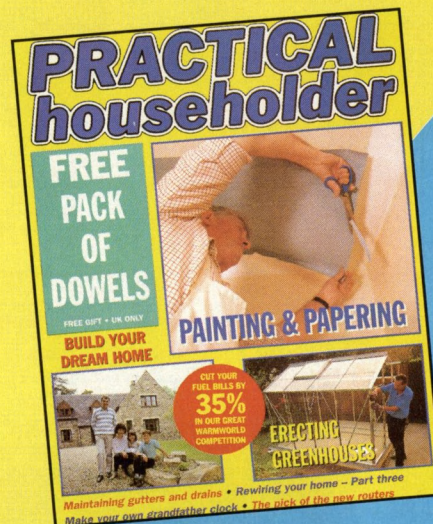
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TEST DRIVE

DCTV

Digital Composite Television

One of the most eagerly-awaited and highly publicised developments on the Amiga for years is DCTV. Mike Nelson explains how it works and test drives it to see if it really offers the proclaimed revolution in Amiga graphics.

The revolutionary display and digitising system for the Amiga. Well, that's what those hyped-up fanatics at Digital Creations declare, but what is the truth behind this "revolution"? Does DCTV live up to all the wonderful claims made about it in the USA, or is it just a publicist's illusion with nothing to offer?

I put DCTV through its paces, trying out both the digitising hardware and the custom paint package, in an effort to get to the bottom of all the hype and counter-hype. But before

strain, and also if you look closely at the screen, you will see the individual components which constitute the picture blur noticeably at the edges. It is for this reason that RGB is used to make computer monitors bearable. Now, under normal circumstances, you don't watch television from less than 18" away, and the natural movement of TV programmes makes this blurring largely inconsequential. You can see what I mean by looking closely at the television, perhaps when the News is on, and displaying those nice graphics to show opinion

spectacular, is somewhat inconvenient to work with and is mainly used for digitised pictures. Most of the time you are restricted to a mere 16 or 32 colours from the palette.

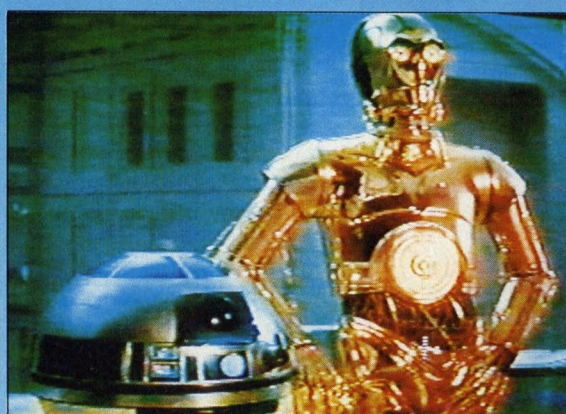
You never get something for nothing with computers!

If you learn one thing about the wretched machines, it is this old adage, and with regard to colour, nothing could be more true. Broadly speaking, the higher the resolution (meaning the density of the pixels comprising the RGB display), the smaller the palette, and inevitably a compromise must be struck. With regard to Composite video, the control mechanism for the "pixels" is different. Instead of using primary colour values, the video signal consists of a "Chrominance" level which dictates the colour, and a "Luminance" value which determines how bright that colour will be. This gives far more potential colours (pretty well



the serious business of the review, it is appropriate to explain a bit about the technology as it is certainly a novel approach to video on the Amiga.

There is a fundamental difference between the signals used in broadcast television and computer displays, and one reason for the Amiga's success is that its basic design caters for both Composite video and the more familiar world of RGB (Red, Green, Blue, to be exact). Many Amigas are connected to domestic televisions for a reasonably good display, especially when it comes to blasting aliens. However, try reading 80-column text on your telly and you will rapidly learn about eye-



"Try reading 80-column text on your telly and you will rapidly learn about eyestrain."

poll ratings, or the inflation rate in Senegal. The graphics are far from sharp, but the normal viewing distance successfully hides this.

RGB, on the other hand, works on a completely different principle in that each individual pixel on screen has varying amounts of the primary colours to mix the display. Amiga users will be at home with the palette mixing tools of most Amiga paint software, and altering the relative quantities of red, green and blue between 0 and 15 results in a theoretical choice of 4096 colours. This is all fine except you can only see all 4096 in a special graphics mode called HAM which, although looking



infinite, in fact, as we're dealing with analogue as opposed to digital), but the imprecise nature of the signal essentially blurs detail when compared to RGB.

Why am I telling you all this? DCTV is a completely new way of generating graphics on the Amiga. It is a very important product for both Digital Creations and Commodore themselves as it is this technology which forms the basis for the new Advanced Video Mode (AVM) of CDTV, and so the link between computers, multimedia and television is revealed. Having previewed some of the graphics afforded by CD-ROM based machines utilising DCTV, and successfully avoided saying CDTV-DCTV

IS GO!

until now, the effect is incredible and should give Philips and Co something to aim at.

The Hardware

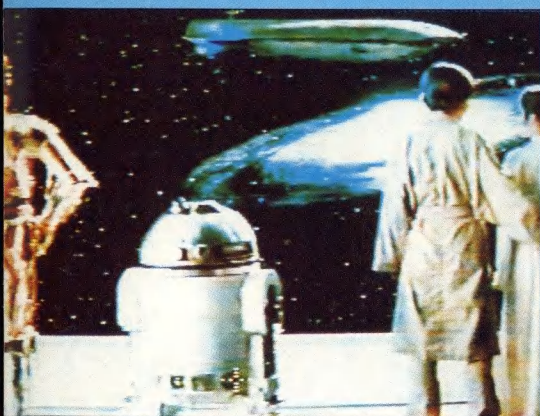
The idea is that instead of using RGB, Digital Composite uses the Luminance and

fitted with a composite RCA plug and a button to switch between this and RGB. Secondly, many video recorders, especially modern ones, have an appropriate input and you can use the telly for an alternative display.

How does this fit in with the Amiga com-

The Digitise and Process Software

The DCTV package comes with three disks and an easy installation procedure for a hard drive which, although nice, is by no means essential for things to work. The minimum requirement is 1 Mb but this will seriously



Chrominance signals. This is all controlled by a small black box, about 4" by 5" by 1", which plugs into both the RGB and parallel ports on the Amiga. It has two RCA phono sockets marked Video In and Out, and these are very easy to connect up; the In is your source for digitising - either a camera or video with a decent freeze frame. The Out, however, is slightly more tricky to play with. Remember that this is putting out a Composite video signal which is no use to an RGB monitor and your average telly will only have a co-axial plug for an aerial. There are two easy ways around this: firstly, there is the option of using your 1084 (or equivalent) monitor as these are

"It is a very important product for both Digital Creations and Commodore themselves as it is this technology which forms the basis for the new Advanced Video Mode."

puter itself? How does the system know what to display? The answer to this is that the DCTV box automatically detects the presence of a composite image for output, and lets an RGB signal through untouched. The crux of DCTV is that the Amiga thinks it is displaying a normal HIRES screen; the DCTV software encodes the composite information which the hardware then senses and re-routes the signal to the "Out" socket for display. As an aside, the RGB image is also displayed, but looks like nothing on Earth. The pictures show what the composite can do, however, and the implications of this simple, but effective, design will be examined later.

limit what you can do, and Digital Creations recommend a healthy 3 Mb or if you're feeling keen five is best. I used an accelerated Amiga 2000 and the processing speed couldn't be described as slow, but on a bare 68000 I would anticipate getting bored by the delays in generating digitised pictures; the paint package seems quick enough, however. Everything runs very well and the software refused to crash, even under 2.0 and with serious multi-tasking going on. A number of helpful utilities are also supplied to convert between DCTV and standard IFF files with other manufacturers' software (most notably ASDG's Art Department 2) having DCTV support.

TEST DRIVE

DCTV CONTINUED

◀ Launching the program and switching to the composite display causes a pretty negative reaction as you soon appreciate why RGB is more humane on the peepers. The blurry screen with its 2.0-style gadgets takes a lot of getting used to, but once this largely aesthetic hurdle is overcome, you soon get into the swing of things.

Firstly, I tried the digitiser, using both a video recorder and camera which were reasonably high quality, but by no means out of the reach of mortals. There are details about digitizing in general elsewhere in the In Vision supplement, and these hold good for DCTV which requires about 6-10 seconds to grab an image. Subsequent number crunching takes 10-20 odd seconds (accelerated).

Once you have digitised the picture or video frame, you will almost certainly have to use one of the myriad of image processing tools to optimise its appearance. This flexibility is often a double edged sword as you don't know where to start given the choice between colour (well, color actually), tint, brightness, contrast, sharpness, red, green and blue. I found that most pictures required a bit of boosting in the brightness and after while it was easy to guess the amount - the best way was to use the monitor's controls first before doing anything on the computer. You can play around for ages to get the best results and then either save the raw data (about 500K) or a "display" IFF file, around 160K.

The software has a number of graphics modes, just like the Amiga, although only the overscan sizes are directly analogous. Using interlaced HIRES or 4 bitplanes results in a noticeable better image, but the flipside is that things take longer to do and require more memory.

The Paint Package.

This is a really difficult one to describe as it so different to standard computer graphics, where you have really close control over the individual pixels. Personally, I can't see how anyone would seriously consider doing much in the way of primary artwork using DCTV, but the paint software is really very powerful and excellent for working on existing digitised images. Remembering that you can convert and import regular Amiga graphics into DCTV relatively easily, this should not be taken as too heavy a downer.

The main problem is getting to grips with a totally new colour control system and Digital Creations' programmers have gone to considerable lengths to ease the process with a reasonable amount of success. You are working in a completely new environment which is perhaps closer to the real world of brush art than conventional computer graphics. This new way of thinking is partly enforced by the DCTV mechanism, but again, every silver

"It's great to see an effective 'undo' button as there is a fair amount of trial and error when it comes to using DCTV-Paint."

cloud has a lining (!). You can do things with composite video that RGB graphics (particularly the rather old technology of HAM) finds difficult, if not impossible.

Anyway, what can it do? You start off in brush mode and a moveable screen which wouldn't really look out of place on any other Amiga software. There are a number of "wells" containing various colours and a load of conventional graphics tools such as line, circle, or arc, and also cut 'n' paste gadgets across the top. There is a large white area which I will come to presently. It's great to see an effective "undo" button as there is a fair amount of trial and error when it comes to using DCTV-Paint, at least initially.

There are a number of different brush types and sizes, much like Deluxe Paint's, but there are several varieties of paint modes which dictate how they work. Overall, even with the magnification set, you don't get very good control on an individual pixel basis as with RGB graphics. Most of the artwork is done under "airbrush" type of conditions with a pile of options to vary the amount of colour applied. The flow rate indicates how much paint comes out of the brush and Watercolour is a good way to describe the effect that results from reducing the value to less than 100%. The screen receives an initial blob of paint which is gradually reduced according to the flow rate. This all takes some getting used to, but there is a well thought out tutorial provided in the manual (with appropriate images on disk) to assist with new concepts such as the effect of altering just luminance or chrominance.

Colour Control

As might be guessed from what has already been described, DCTV has a pretty unusual method of generating colour. Because the fundamental architecture has its roots the world of analogue electronics, Digital Creations had to invent a means of representing this in the computer, hence the "Digital Composite" of the product name. In fact, they solved the problem in part by simulating the RGB selection system using sliders for each component, except the values go from 0 to 255, rather than 15 as on the standard Amiga.

Mathematicians will instantly jump up and down shouting about 3 times 8 being 24, therefore 24-bit graphics and 16 million possible colours. Strictly speaking, yes, but in practice, no. This is because the DCTV approximates the colours, and also the individual pixels are not specifically controlled. Incidentally, there are three other controllers for colour - Hue, Saturation, and Value, Cyan, Magenta and Yellow, or Hue, Lightness, Saturation. I tended to only use RGB, however as old habits refuse to die even hard.

The white part of the main panel is the mixing area where you can try out the various effects, adding layers of paint over each other to get the right colours. It's very effective indeed as all the tools normally available on the screen can be applied to this box.

Other useful tools include the magnification button which blows up a defined area of the screen, and the ability to paste pieces of pictures together. Composite colour lends itself admirably to gradients of colour, and this is an area in which the software excels with a



pile of different effects, including a really nice spiral.

Using DCTV with other programs

This is not half as daft as it sounds as the secret to DCTV's mechanism is that it uses standard Amiga display hardware to output its files; the interpretation is done afterwards. This means that although programs can display DCTV pictures without realising it, they can't be used to edit them as the file is meaningless, but they can be used to string together animations, for instance. Any Amiga authoring software which deals in IFF files (let's face, they all do as that is the whole point of IFF) will unknowingly work with DCTV pictures, and providing no modification to the bitmaps occurs, everything should hang together nicely. Clever, isn't it?

Conclusion

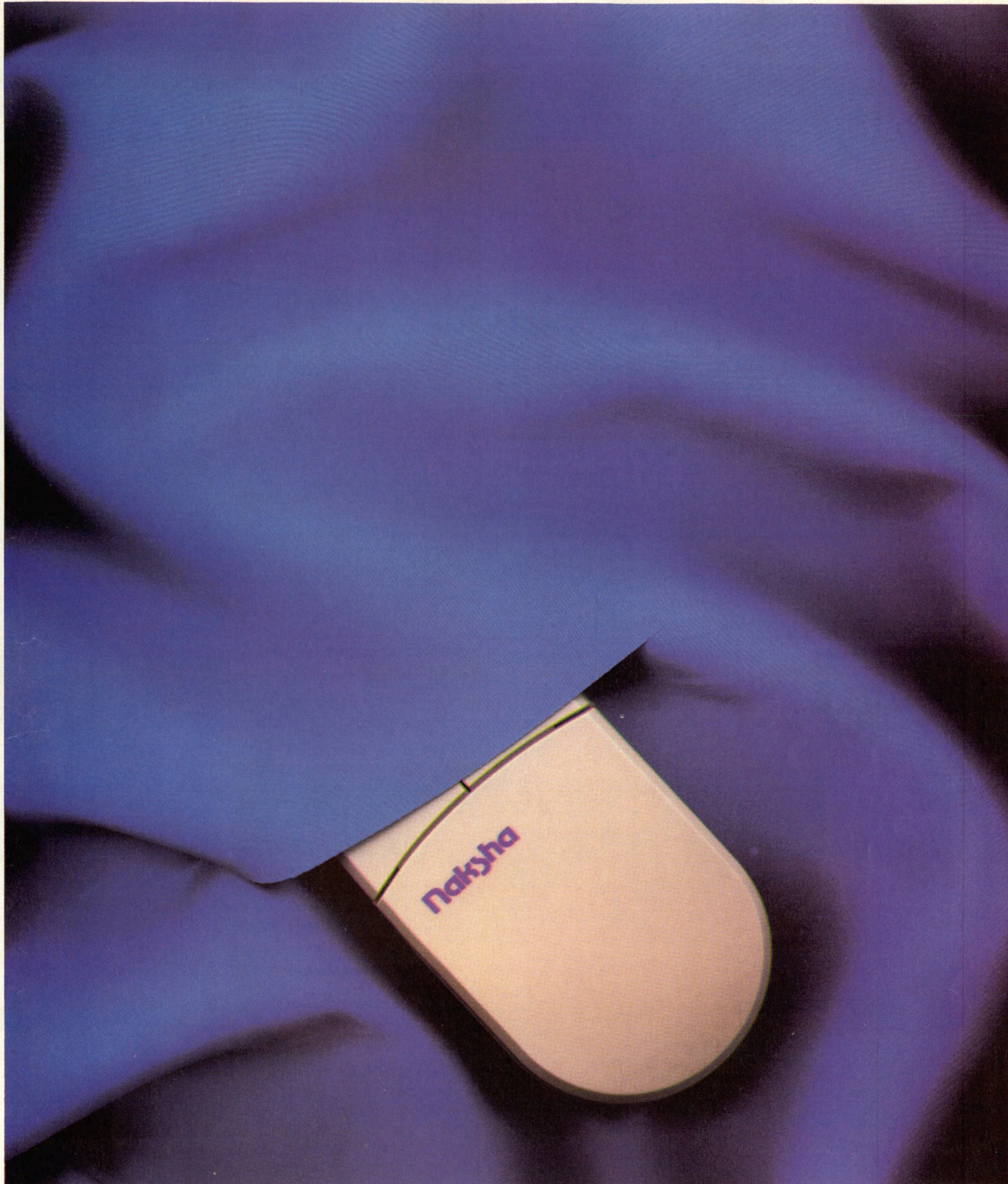
Whether or not you find DCTV of use really depends on several factors, namely your budget, your requirements, what you are used to and what you expect. It will never outshine a proper 24-bit graphics board like the IV-24, but then it's a fraction of the price and works with largely available hardware. If you are used to TV-style graphics, then DCTV is a monumental improvement over standard Amiga graphics, and with the advent of AVI there may even be some awesome games in the offing, although I wouldn't try any breath holding. If pin sharp RGB graphics are your fundamental requirement, then you will need to shell out for more expensive gear.

DCTV performs very well indeed; Digital Creations have done a first class job of the software which exploits the undoubted strengths of the hardware almost to the full, whilst a lot of effort has gone into minimising the obvious weaknesses inherent to composite video. You have to take the picture quality offered in the context of a television image, and a couple of paces back from the screen makes an immense difference.

In short, the power user will probably want real RGB graphics, but for the majority of Amiga owners, DCTV offers a large step in the direction of more colours, and the increasing number of 3D-rendering programs which support it makes for some very interesting screen shots of the future.

Price: \$495.00 (about £350.00)

Contact: Digital Creations,
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TEST DRIVE

Unlike computers, human vision is not based on groups of numbers nor two dimensional, but three dimensional visual perception. That fact is also Octree's reason why the birth of Caligari 2 is such an important one. Gary Fenton has been exploring the third dimension through Caligari 2.

Caligari 2

After watching the Caligari video that accompanies the software, you can't help but think how glad you were that you bought Caligari. It looked so easy in the video, the way you can grab hold of an object and move it through 3D space in real time. Surely it's not that simple? Oh, but it is.

The idea behind Caligari is that the user can work in real time in a 3D environment with the greatest of ease. There are 4 ways to look at the 3D world in Caligari. The first and foremost is the 3D perspective. The other 3 are top, front and side views which are the typical views you get with other 3D packages. There are no quarter screen windows to work in, nor any difficulties in placing objects in a large 3D space. There is just one large, overscan screen with a control panel at the bottom of the screen.

Going Places

Before I go any further I will explain a little about navigation in Caligari. There are two subjects that can be moved around the 3D space. These are the objects themselves and your view through the camera. A button toggles between eye and object operations or the space bar will do the same thing. The same navigation controls move both your eye and the objects, depending which of the two has been selected. MOVE, ROTATE and SCALE buttons can be selected by clicking on them or using the first 3 keys on the keyboard, Q, W, E. Having alternatives on the keyboard means that the user can operate Caligari a lot faster with one hand on the mouse and the other resting on the keyboard.

When MOVE and OBJECT have been selected you can hold down your left, right, or both mouse buttons to decide which axis your object moves in. Moving the mouse around will move the object, mimicking every movement that your mouse makes in real time. If you move the object further into the distance it will naturally become smaller. If you have ever seen a Power Glove, as used in virtually reality, then you may have an idea about how navigation works in Caligari. Similarly, if

you were to select ROTATE and hold down one, or both mouse buttons, and move the mouse around the object will rotate in the very same direction. SCALE will resize your object in any one, or a combination of axis. The resizing happens instantaneously just like any other navigation operation.

Rotating or moving objects by mouse is not a totally accurate way of position them. If you need precise control you can enter numbers directly into Caligari. For example, typing in 180 in the ROTATE X gadget will rotate an object 180 degrees about the X axis.

Mouse control makes moving around the 3D world so very easy. The next best thing to a mouse would be a Power Glove to move objects and a helicopter control to move the camera angle! Movement on all 3 axes (X, Y and Z) can be controlled by holding down the left or right mouse button. Holding down both buttons will have various effects depending which navigation control you have selected.

The power of Caligari's navigation controls can be demonstrated by "flying" in real time through and around objects you have created. If you have made a building, or a whole city, you can fly around in real time to view your masterpiece from all angles, just like a flight simulator.

Real Time

Power Before you dash out and buy Caligari 2, I'd better tell you about the processor overhead. It takes an enormous amount of computer power to move objects in real time because of the maths involved. On an ordinary A500 with a 68000 processor you can expect to see smaller objects move in real time such as half a sphere or a dozen cubes. If you have too many sides to your objects then Caligari will reduce the objects to a cube which will move in real time. There is no great loss using a stock A500 because the cube representation of your object can be moved and scaled in real time.

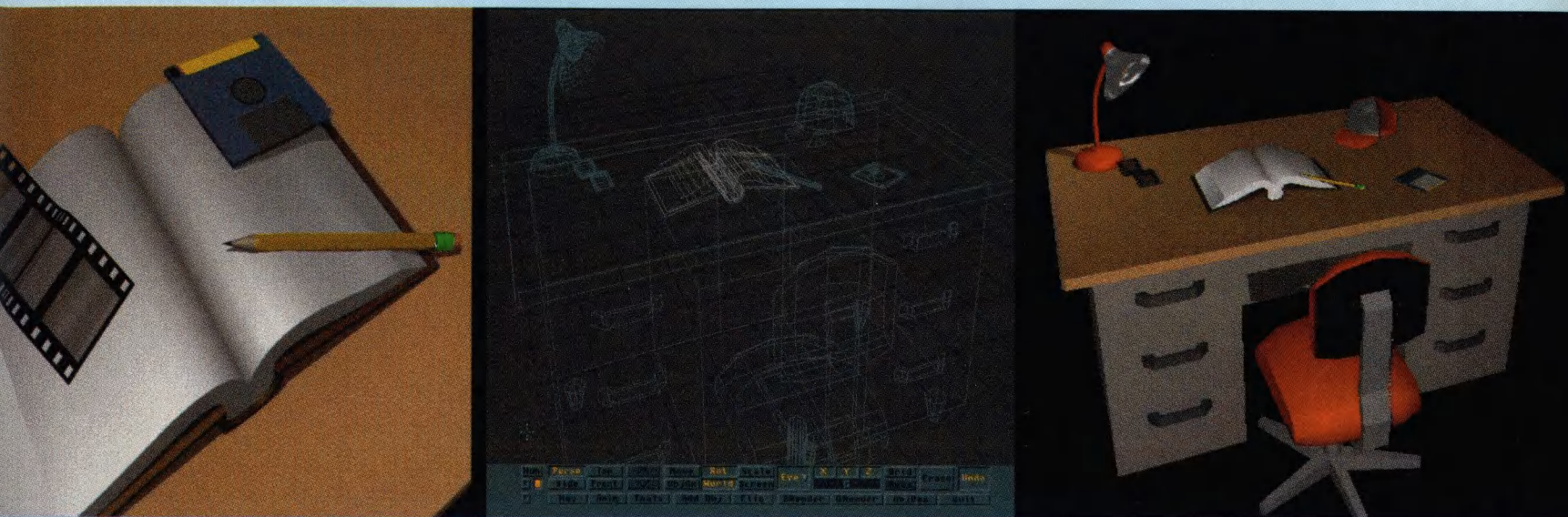
On more powerful Amigas such as an A1500 with a GVP Combo board, or an A3000, the ceiling for real time complicated objects is lifted even higher. This

Amiga Ham.

24 Bit

24 Bit





Ham with Toaster Objects.

means that objects such as Robbie the Robot can be manipulated in real time as a complicated whole object, not a cube. You can always manually lift the threshold to obtain detailed real time manipulation, but movement will be jerky.

Building Blocks

Creating a new object from scratch is pretty straight forward. Like all 3D programs, Caligari has built-in primitive objects. Clicking on the Primitive button will bring up a list of pictures of the shapes from which you can choose. There are 18 in total ranging from spheres to triangles and pyramids to a boat hull(!). As soon as you have clicked on the primitive you want to work with, it will appear in the centre of the Caligari world. You can load as many as you like at this stage by clicking on the different primitives. Selecting DONE will return you to the main control panel.

Building Further

Enough of navigation. What about creating an object from scratch to fit your own design? Well, you could use the extruder feature. The extruder lets you draw a 2D shape with the mouse and then cut holes in it afterwards. This 2D shape can be extruded into a 3D object or a flat 2D plane.

Every version of Caligari 2 comes with a Eurofont which is a directory of files describing 2D letters of the alphabet. Any letter or number can be loaded into the extruder and either modified or extruded into a solid 3D object. The extruder offers many tools for more complicated operations.

Videoscape and Lightwave fans will be pleased to know that Caligari can load objects that were created and saved in either of these packages. This is a very handy feature which will make use of the hundreds of objects that were created for Videoscape and Lightwave. (Lightwave is the 3D package that was written for NewTek's Video Toaster, so there may not be that many users in the U.K.!) Once you have created an object you will most probably want to edit it even

further. Point editing tools allow you to alter individual points and edges on the object. This is also a real time operation which allows you to view in 3D any alterations you make as you move your mouse. There are other tools to aid you while editing objects. A simple shape can be turned into a very complicated one by clicking on QUADDIVIDE. The professional broadcast version of Caligari offers many more comprehensive tools than the standard version we are reviewing. Still, our review copy provided a sufficient number tools to create any object we could dream up.

Good Connections

Caligari works with objects using a hierarchy. This means that when you create a person the foot bone is connected to the shin bone, the shin bone is connected to the thigh bone, and the song goes on. Robbie the Robot is a good example of hierarchy control. If you select Robbie by clicking on him and then click on the down arrow on the control panel his head will change colour. His head is the first object in the hierarchy and can now be altered while it is in a different colour. By clicking on the down arrow again you will move further down the hierarchy.

Once you have made some sort of object you will want to see it in a solid form. A single mouse click on RENDER will render the current object in solid colours. A sphere can take around 8 seconds to draw on an A500 but next time you render it, it will be instantaneous thanks to some clever programing by Octree.

Scene Module

The scene module is where all your objects can be brought together to create a scene. Fine editing of objects is not permitted here but you can scale objects with no hassle at all.

Once you have directed your scene, you can preview it in solid colours by hitting QRENDER which is the quick renderer, similar to the one found in the object design module. When you are happy with your scene you can either use the

24 Bit

24 Bit



◀ broadcast renderer to create a high quality still frame or create some animation.

Animation

The animation control in Caligari 2 is the simplest, yet the most fantastic I have had the pleasure to come across. It uses tweening techniques, so the user just has to specify two positions and the computer will work out the positions in between.

The animation control takes place in Caligari's 3D environment (of course) and is very easy to pick up. For example, set the frame counter to 0 and select SET to set the first key frame. Then you set the frame counter to the next key frame you want to make. Setting it to 25 will take you 1 second into the animation. Now you can select an object and perhaps move it away from the camera. Select SET to confirm this key frame and then change the frame counter again. This time you may like to move the camera up in the air and rotate down to look at the ground. You can also move any or all objects at the same time. Again, selecting SET will confirm the new key frame. UNSET will cancel a key frame if you wish to delete one.

When you have finished directing the action you must decide whether you want smooth spline movements (see illustration) or sharp linear action. Spline movement is the most natural of the two. Clicking on COMPILE will render a wire frame animation. This takes a very short time to compute and can be played back in real time by clicking on PLAY. The mouse can be used for jog/shuttle control of the animation just like a VCR! The same animation can be rendered in solid colours and is saved to disk frame by frame. All frames can then be loaded into DPaint 3 or 4 automatically to create an animation.

When you are ready to make a high quality animation, select the BRENDAER button. Firstly, you must select the resolution you want to render in, the level of anti-aliasing (4 levels), and finally you can assign attributes to the scene.

Attributes (bless you)

Bad control of attributes in a 3D package can kill it off for good. Fortunately Caligari 2 survives. Attributes are colours and textures which each object, hierarchy section, and face can individually own. Our version of Caligari supports texture mapping, ambience, diffusion, shininess, surface colour, 1D and cubic

Caligari and Caligari Broadcast

Octree have two versions of Caligari for two different markets. The version we reviewed here is aimed towards home enthusiasts and semi-professional computer animators. The Broadcast version is 3 times as expensive as its little brother and features many extra tools and effects with support for various 24/32 bit graphic boards. The reviewed version of Caligari supports not only Amiga HAM modes, but also HAM-E and DCTV. When rendering you can follow the computers progress as it renders directly to the selected frame buffer.

environment mapping, 2 types of facet shading, auto facet shading, smooth, phong, gouraud and finally, metal shading. There are some attributes and textures on the Caligari disks to help get you started.

Creating an attribute for an object involves little effort. Clicking on an object will highlight it and using the material select buttons will move you through that objects hierarchy. While a face or object is highlighted you can create or alter its attributes. Most changes can be made by using a series of slider bars or by typing in numbers manually.

Not So Bright

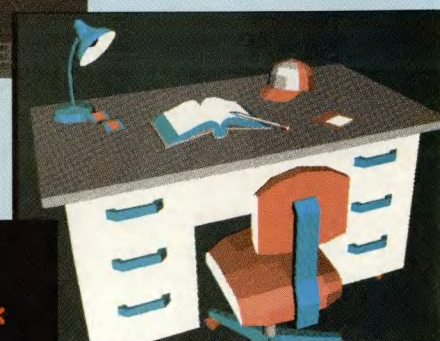
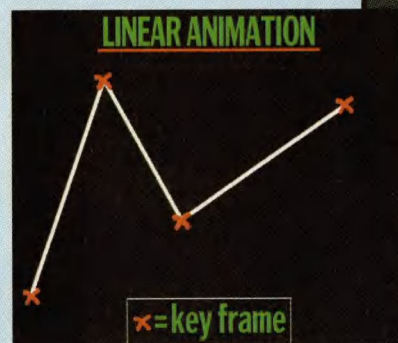
Lighting can be a little fiddly to setup. You can have as many lights as you like, and whatever colour or brightness takes your fancy. Each light has its own barn door which controls the spread of the light in degrees. Spotlights can create nice effects and selecting shadows will put the final touches to a scene.

When you want to place a light you must move your camera view to where the light is to be placed. Hitting the FROM EYE button will place the light where your eye is and TO OBJECT will make the light face the object you are looking at. This disadvantage here is that you must leave your current location and move around the scene to place the lights. Caligari would benefit by introducing a 10 location memory for instant transportation to a memorised location. Any chance of that Octree?

Just An Illusion

One of five rendering styles (flat, phong, gouraud, metal and environment) can be assigned to each object or face. Environment rendering involves wrapping images around objects. Caligari can't do reflections in a true sense. A cubic environment is needed to make a reflection. This renders 6 images from various angles around the objects and then wraps the appropriate image onto an object to give the illusion of a reflection. This is a lot faster than standard reflection ray tracing but cubic reflections are not as accurate. Texture mapping is handled very well using mouse

SPLINE ANIMATION



controls to place the texture onto the object.

Caligari is extremely fast when it comes to rendering. The main reason for its speed advantage is that it is not a ray tracing program. It renders the scene instead which is a faster method. However, this technique does not produce reflections that are as perfect as ray tracing. In fact, reflections in Caligari take some time to master.

Caligari 2 vs Real 3D 1.4 vs Imagine 2

Which one of the 3 best 3D packages to buy is a difficult question to reply to. There is no one answer because it really boils down to personal preference and requirements. We shall consider the matter in a later issue.

Conclusion

Caligari, unlike Imagine and Real 3D, does not support hierarchy animation which is a great pity. Also, Caligari does not have any morphing features or any bump mapping facilities at all. I have found that creating a moody or suggestive atmosphere in Caligari is very difficult to achieve. Rendered scenes look computer generated which is no good if you want photographic images.

Caligari is a very easy 3D package to use. Half of the reason for this is that there are not as many controls and options compared to other 3D packages. The other reason for its ease of use is actually its greatest strength. This is its unique interface which I felt very comfortable using.

Caligari was originally released long before its competitors but, sadly, it has been left behind in terms of editing tools, mapping and animation. There are pros and cons wherever you go and Caligari has its equal share of them. Because of its intuitive and powerful interface, I recommend you take a look at it before deciding which 3D modeling and animation package to buy. You never know, Caligari might be what you are looking for.

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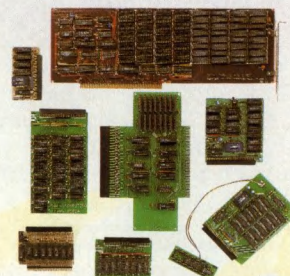
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TEST DRIVE

It isn't often that something completely new lands on the reviewer's hard drive, as most software these days seems to be either upgrades of existing products, or variations on a theme from another manufacturer. Presentation Master does not fall into either category and one has to look to the PC or Apple Mac for programs which come close. The world of business presentation software is a relatively recent marketplace for even these hardened computers, and one of the best known products in the field is Harvard Graphics, but Presentation Master makes this look like a ZX81 program. It's difficult to know where to start describing it, let alone reviewing Presentation Master, but the best I can come up with is that it fuses all of the Amiga's fabulous graphics processing potential into a truly awesome slide generator. How many PC or Mac presentation packages play animations or generate speech?

The program consists of a number of different modules for editing, manipulating and outputting information. This information can be in almost any format, but most people will use Presentation Master to display the subheadings describing the subject matter of a presentation, various graphs to illustrate numerical data, and still pictures.

Presentation Master is equipped with a whole array of useful tools and samples of fonts and clip art, coming on about thirteen disks. I say "about" because the version under review was a Gamma-2A release and so I cannot be certain about the precise format to be supplied. Full implementation requires a whopping 12 Mb of hard drive space, although the superb new Commodore standard installer gives you many options to decrease this requirement.

From a hardware point of view, Presentation Master has been carefully designed with overlays to minimise the RAM requirements, and although 2 Mb is the minimum requirement, you will run into trouble pretty soon with this amount so I would recommend a couple more megs for a decent environment. I ran the program on a 33 MHz GVP 68030 based A2000 and it was not amazingly fast, so users with a bare 68000 may find the speed frustrating.

Overview

The basic function of Presentation Master (PM for short) is to generate slides for

Presentation Master

Want to win friends and influence people - and grab the big money at the same time? Getting over the right image of yourself, making the best presentation of the message you want to get across helps a lot in climbing that slippery stepladder to success. But now it can be done with your Amiga, as Mike Nelson finds out with OXXI's new high level package.

lectures, business meetings or any public talk or illustrated presenting of material, and these slides may be converted from Amiga graphics to conventional transparencies, overheads, or simply printed on paper.

There are two principle modes of operation, one for editing the individual slides and the other for stringing them together for the overall presentation (or "show" as PM calls it); swapping between these modes is virtually unrestricted so your talk can be planned and altered without too much difficulty. An

entire presentation can be saved as either IFF graphics files or as the raw data that the program uses, so you can move favourite slides between different shows but still maintain the ability to edit them.

With regard to output, PM is equipped with a stand-alone player to display the slides according to your pre-programmed

sequence. This can also be interactive as PM allows you to place control buttons on each slide so if you are using the Amiga in a live presentation, you can actually alter the direction of the proceedings according to the discussion or questions being posed. Never again need you be fazed by the awkward git who asks to see the thirteenth slide out of 85 to point out a spelling error.

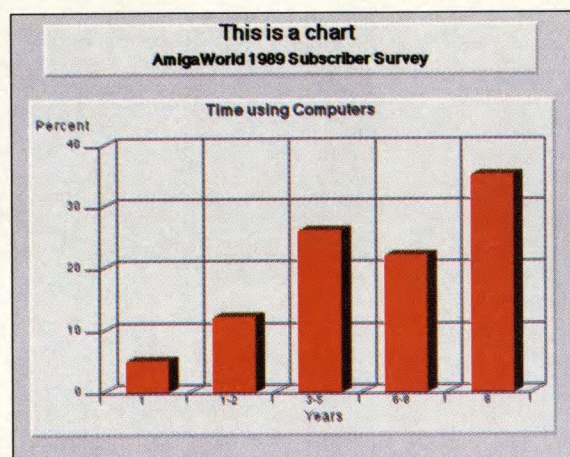
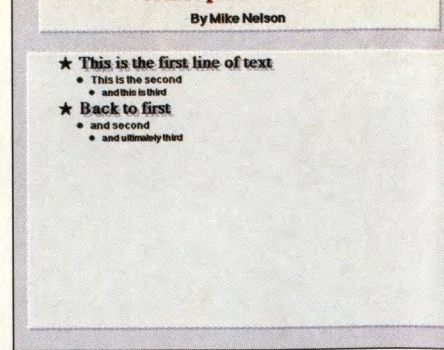
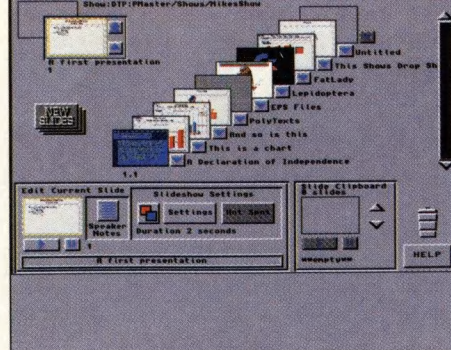
PM can also help you to generate both speaker and audience notes to go with each slide so if the speech synthesizer is inadequate (let's face it who's going to be convinced by a Dalek with a sore throat), you needn't be stuck for words. You can also produce "storyboards" which are loads of slides crammed onto a single printed page - a useful means of planning videos.

The Slide

PM uses a system of layers for its individual slides. Text layers naturally hold text, and structured graphics (including a special type of text, but see later) have their own layer while IFF backgrounds complete the slide. PM supports its own templates so you can save standard slide formats, or simply use one of the many supplied in the package. Overhead projectors, for instance are much more effective when bold text is used on a plain background, whereas the dark room of a slide projector favours the opposite combination.

Text Layers

PM has full support for outline or Compugraphics fonts such those supplied with Workbench 2.0 or Professional



Page, and so on the HIRES screen the output looks superb. The hassles about laying out boxes are largely eliminated by using templates and the ready-supplied ones are pretty hard to improve on, but users of conventional DTP programs will be pleased to find how similar Presentation Master's system is.

Broadly speaking, a slide will have three main text boxes. The first two are

tion ster

simply a title and subtitle, and finally the main body text of the slide. Each box can have its own font from the many Compugraphics included on the disks, and although they are named after birds, the fonts do amazingly accurate impressions of the standard PostScript Times, Helvetica, Palatino, and Symbols etc. The beauty of Outline fonts is that they can be generated in any point size as they are not bitmaps and so the problems of jaggies are eliminated completely.

The main body text can be bulleted, meaning that the Tab key is used to indent up to three different lists each with its own definable bullet character which may be a simple dot, a pointing hand, or star from a comprehensive list. Naturally, font attributes like bold, italic and underline can also be applied to the different boxes with global changes being made using a multi-purpose requester.

This requester also contains a number of special effects which are automatically generated by Presentation Master. These can provide quite a dramatic emphasis and really make your text stand out. For instance, a drop shadow can be applied to give a three dimensional illusion, or a boldly coloured outline shouts "wake up and look at me" to the bored audience. The whole special effect thing can also be made very subtle as the program is very versatile in its choices available. I will describe the user interface and colour options in more detail later.

Graphics Layers

This is really where things start to get

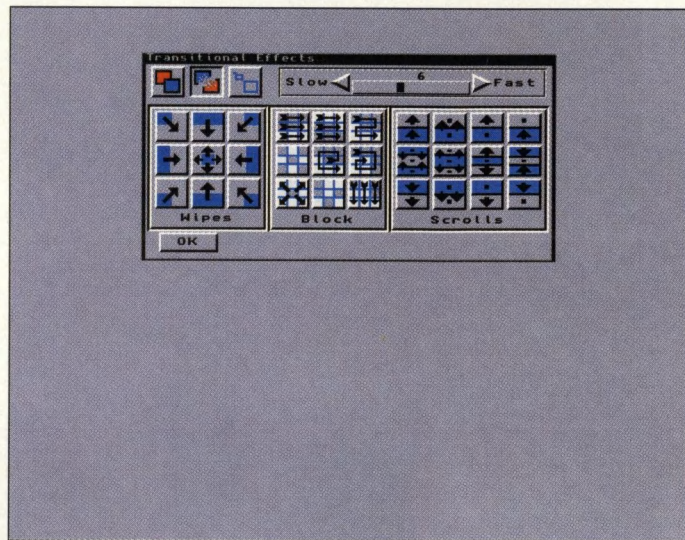
very interesting indeed as Presentation Master contains a fully-featured object orientated structured graphics editor. This is one of the most powerful structured drawing programs I have seen on the Amiga, and in many ways it puts established software like Gold Disk's Professional Draw to shame in what it can do. The shapes that PM deals with correspond fairly closely to those described by graphics guru Gwynne Harper in his series on structured drawing. Generating straight lines, Bezier curves, circles and squares is simply a matter of selecting the appropriate tool from the gadgets and dragging the mouse around the screen. For those unfamiliar with structured drawing, the difference between this and something like DPaint is that the mathematical equations defining the lines are remembered as opposed to the pixels and so it is much easier to subsequently edit or re-scale the drawing while output on a device with a higher resolution occurs without those dreaded jaggies appearing.

Once again, the special effects requester can be applied to structured objects and PM will automatically put your drop shadows in place. You have full control over the size of the shadow in both the horizontal and vertical planes. Care over the selection of colours means you can get the three-dimensional effects of Workbench 2.0's new look for your own slides. It's very easy as you just choose a lighter colour for the top and left edges than the bottom and right ones to get the image to stand out, while the image is indented by reversing the colours. This is particularly effective for squares or rectangles, but interesting effects result from drawing circles, but the rendering time seems to be very slow indeed for these odd shapes.

There isn't really any way of saving out individual structured drawings in the same way that Pro Draw clips are implemented, but it is easy enough to cut and paste between slides and Encapsulated PostScript (EPS) is fully supported. In fact, this is one of Presentation Master's most impressive features for you can actually import clip art in this standard form and still edit it (see picture of the famous Adobe Tiger with its sabre toothed alter-ego). Very few programs will decode EPS files for subsequent editing and although a complex drawing can take a while to render (and hence screen updates can be a bit painful), this is currently the only pro-

gram I am aware of on the Amiga which even displays EPS let alone allows editing!

One problem I had, however, was that files generated in Professional Page EPS format were read by Presentation Master but incorrectly displayed. I don't know which program is to blame, but this means you have no way of transferring Gold



"Never again need you be fazed by the awkward git who asks to see the thirteenth slide out of 85 to point out a spelling error."

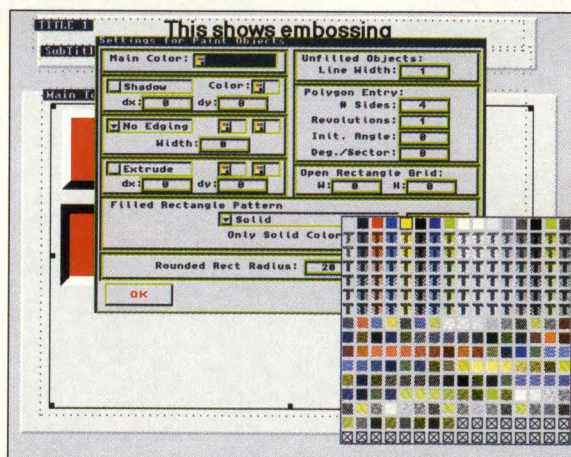
Disk clips into Presentation Master, at present anyway. However, the review PM is currently a Gamma version and BOTH programs output to Post-Script printers perfectly well, so this is likely to be a minor problem (Incidentally, ProPage deals perfectly well with the clipart supplied by Oxxi so I suspect that PM needs to be modified to read the former's EPS format which should be standard, anyway!).

It's worth mentioning just how Presentation Master manages its structured drawings as it differs quite considerably to ProDraw. When you work on a graphics layer, its component artwork can be divided into further layers. So when you resize, for instance, you are able to get every object to change without having to

mess about with grouping tools - it's automatic depending on the current level.

If you wanted just to alter the size of a single complete object, selecting the arrow gadget gets PM to highlight each object on the slide as the mouse passes over it. Selecting then allows you to apply any of the special effects like resizing, or rotating the drawing. This can be taken down another layer to access the individual shapes that comprise the

overall picture. So when I extended the tiger's gnashers, I was able to use the "down" arrows to get right to the single objects comprising the individual dentition, and simply elongate them with the re-size tool (I didn't even need to redraw them, but that is also an option). The "up" gadget then moves you back through the



TEST DRIVE

Presentation Master

C O N T I N U E D

layers. Structured drawing was never meant to be this easy, but that's progress for you.

PolyText

The Outline fonts for the main text boxes are pretty much standard PostScript fonts that are easy enough to read without being desperately decorative. Presentation Master gives you a second option for displaying text in a more versatile fashion in the form of PolyText. This is another type of outline font and most of the PostScript equivalents are provided along with a couple of artistic examples better suited to video work.

PolyText is a special type of structured graphics object so all the usual drop shadow effects can be applied, but there are some additional ones which allow the user to map the text into an arc, a complete circle or just warp the characters for a bit more impact. The difference between PolyText and normal outlines is subtle in that PM can generate Beziers so you could potentially re-design a font completely, if you had enough inclination. Another superb feature is that PM remembers exactly how the text was generated (unlike Professional Draw which simply builds objects) so you can still revert to the original requester to edit the words, or using the multiple-layer facility apply the effects operators on individual characters, as in the example screen shot where only the capital letters have been warped.

Making Charts

Until now, the best way to generate high quality graphs and charts on the Amiga was to use a program like AmPlot which did the job reasonably well, but was a bit awkward to work with and required a PostScript printer. Though the new Charts and Graphs (reviewed **AUI** March) looks now to be an interesting advance in this area.

Presentation Master has a module which gives you full control over generating graphs from text data, maybe from a

"Font attributes like bold, italic and underline can also be applied to the different boxes with global changes being made using a multi-purpose requester."

spreadsheet. Selecting the "Chart" gadget from the "Paint" tools opens up a new screen which looks remarkably like a spreadsheet front-end. While there aren't actually any 1-2-3 calculations, this is a very familiar means of entering your data to be plotted, or importing it from another file.

Once you have something to plot and have told PM about your titles for both the graph and its axes, you simply press the "Plot" button and your data is instantly (well, nearly) a picture. You can alter the type of graph displayed simply by selecting from the on screen gadgets, and there's no shortage of options. Scientists should note, however, that Presentation Master is slanted towards business graphics and is good at generating nice 3-D "confusograms" but when it comes to error bars and such like, then AmPlot is your best bet - even if you import the EPS files into the graphics layers of your slide.

Histograms, line graphs, best fit curves and pie charts are all built into Presentation Master, so you should be able to find the most effective way to display your data. Comparative graphs to show differences between sets of data are also relatively straightforward to produce as it's just a matter of telling the program which columns of data to plot where. The rest, as they say, is just the press of a button.

By the way, the charting module generates paint objects just like the PolyText part of the program. This means once you return to the "Paint" screen, you can move down the

graphics elements to edit the chart, if you so wish - it's much easier to cheat like this than messing around editing the data before re-plotting!

Background Layer

The budding presenter is not limited to boring backgrounds as PM can take any

IFF file and use it instead of generating its own. These are most useful for producing colour slides as colour overheads are difficult to read. PM can also take a small brush and stamp it down (like DPaint) to produce a mosaic effect as an alternative. Finally, PM will generate black slides for when you want the audience to focus either on you or some other output device.

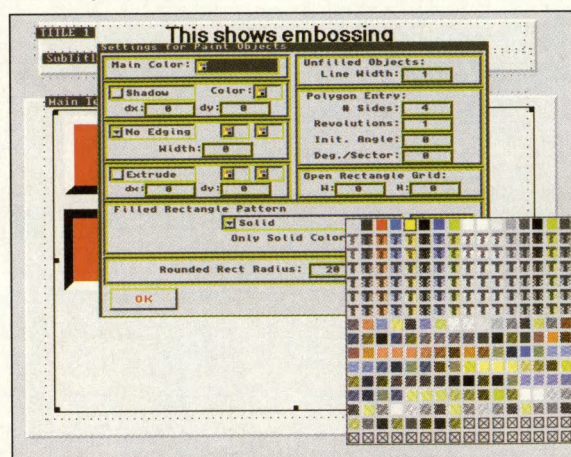
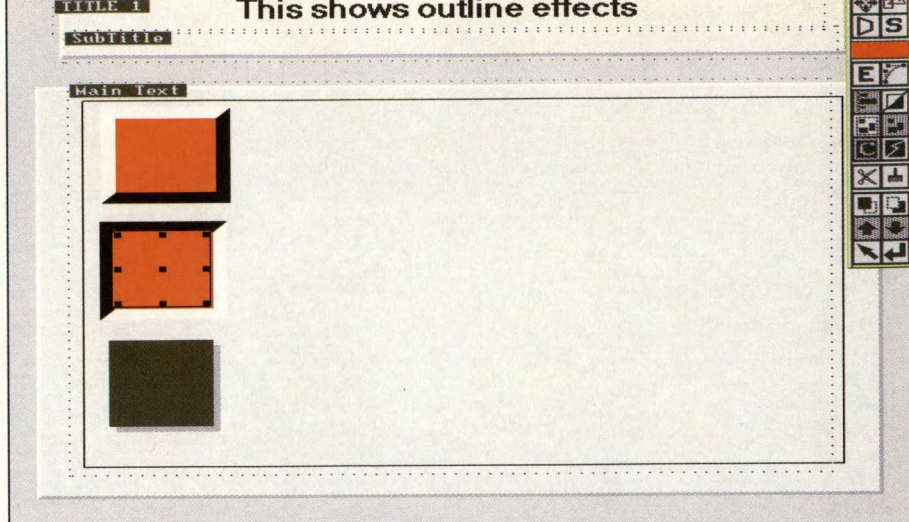
Colour Control

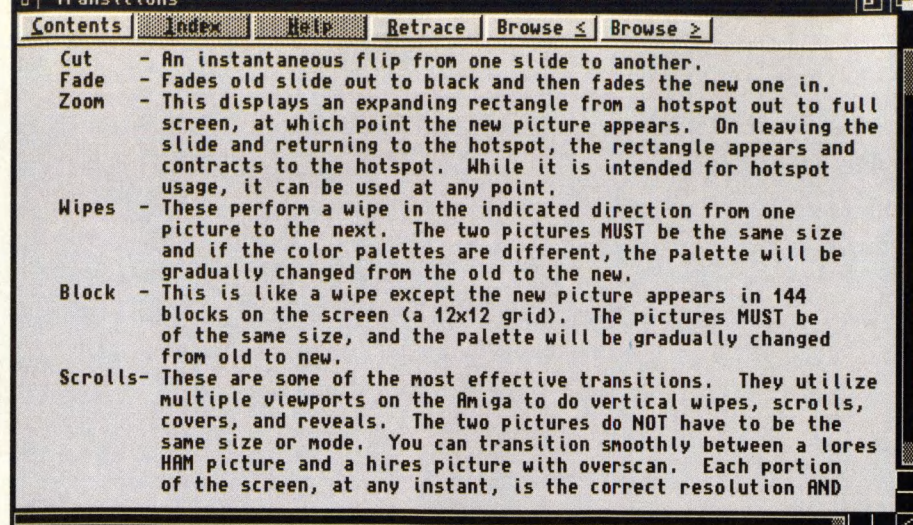
Presentation Master runs its main modules in interlaced HIRES mode which allows a basic palette of only sixteen colours, although these are completely selectable from the Amiga's full complement of 4096. In addition to this, Presentation Master can provide sophisticated dithering algorithms apparently to increase this limit of 16 many times. Some of the options include variously transparent effects where set percentages of a background layer show through the colours of the main layer in front. The colour requester allows for 256 different colours, but most of these are naturally dithered.

Oxix are looking very much to the future of Amiga graphics with this approach and Presentation Master actually stores the colours internally as 24-bit numbers, so eventually, either in future Amigas, or by supporting graphics card add-ons, this dithering will be unnecessary as true colours will appear on the monitor. As it is, the proceedings are slowed down by this dithering business, but people outputting to colour PostScript devices will be pleased to see full support already in place to make for some really awesome graded fills or backgrounds, and also the CMYK system is supported.

The Sorter

Once you are satisfied that your masterpiece is fit for display, you enter the slide sorter module. This allows you to string the slides together in a number of powerful ways. Thumbnail icons are generated by PM for you to get the order of your presentation right, and a hierarchical system is employed. This means that each slide can spawn a whole new layer of children, and the process can continue, much like the Amiga's disk filing system. This has most benefits when you are





using the Amiga to display your slides "live" as you can alter the course of the presentation as the audience requires.

On the subject of doing live performances, Presentation Master has a number of built-in transitions to make the next slide's appearance a bit more interesting than simply displaying it. The usual wipes and fades you see on TV are all easily accessible through a simple requester. Also controllable is the way in which the presentation proceeds. For instance, there are two basic modes of operation - manual in which the slides are triggered by either key presses or mouse clicks, and automatic in which you program in a delay for each slide and the computer then simply obeys these commands. This module also contains the controls for generating speaker and notes and audience handouts.

User Interface

Commodore go to great lengths to lay down guidelines for people designing Intuition-based programs, and Version 2.0 goes much further than ever before in defining the ideal work environment. Presentation Master could be criticised for not sticking strictly to these protocols, and there a number of irritating features such as the menu font is too small (and unmodifiable) so selections need to be over-precise. There are a number of extremely nice features, however, especially in the file requesters which have a "Preview" button to display a resume of what is in the file.

Another very welcome inclusion by Oxixi is support for Commodore's standard on-line help tool, the AppGuide. Whenever there is an error, or you press help, you are asked whether you would like to enter the guide. This is a sort of HyperText application which is an extension of the manual and really can dig you out of a hole quickly and effectively. The system could be improved by giving page references to the user for the appro-

priate section of the manual, but this sort of help will make the already friendly environment of the Amiga even better, giving those Mac users less to crow about. PC users struggling with Windows are already pretty quiet!

A final criticism is that there are not enough keyboard shortcuts, but this is only a problem because the menus are so hard to use, and also the ability to move between slides without going into the sorter would help speed things up.

Outputting Presentations

I have already mentioned that the PostScript language is fully supported and there are some very low-level commands to cover just about any weird requirements of your output device. Most laser printers will print on overhead transparency sheets so that is an ideal way of doing things. Producing slides is slightly

more tricky, especially if you are using colour, but there are many PostScript bureaux around to take your files, although most would require MS-DOS format. These will make full use of 24-bit colour but the other option is to use your Amiga "live" to control the presentation if you want to look really flashy. It's relatively easy to project a video image onto a large screen if you can't get away with a big monitor, but you don't get 16,000,000 colours (yet).

Presentation Master will also "vulcanize" your slide show into a stand-alone playable file which may extend across several floppies. This process includes converting all the layered structured drawings into IFF bitmaps so they have the advantage of being very

fast to display as there is no drawing involved.

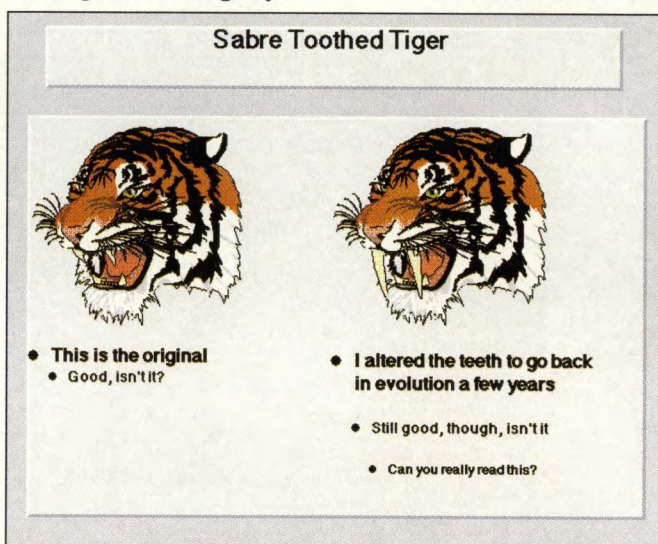
Conclusion

Before praising Presentation Master to the skies, I want to mention that the program is the work of just one programmer, Gary Bonham, whom I was fortunate to meet in the USA last year when he was hard at work on the package. Gary is well-known to developers and among his other contributions to the Amiga is the ANIM IFF format for storing animation frames. The PM project has taken a mere three years of admittedly obsessive keyboard pounding to come to fruition which really goes to show just what an achievement Gary has managed. This is put in perspective when you pause to consider all the "Man Years" that go into PC or Mac products and just typifies the dedication of a relatively small band of programmers to the Amiga.

What a start! Presentation Master will rank alongside software like ASDG's Art Department as one of the most significant Amiga programs very quickly indeed, and it is this kind of quality software the Amiga community has been crying out for. The Amiga will never displace PCs or Macs from office desks, and it would be a shame if all that wonderful graphics power were wasted on word processing and running spreadsheet calculations. However, people are increasingly taking the Amiga seriously for graphics work, as it is so much better than either of the more established business machines. Presentation Master is a truly professional program, already with

more features than comparable PC or Mac software, and it should really wipe the floor with even the biggest boys out there. Congratulations to both Gary Bonham, and Oxixi, on a superb product.

"Another superb feature is that PM remembers exactly how the text was generated... so you can still revert to the original requester to edit the words."



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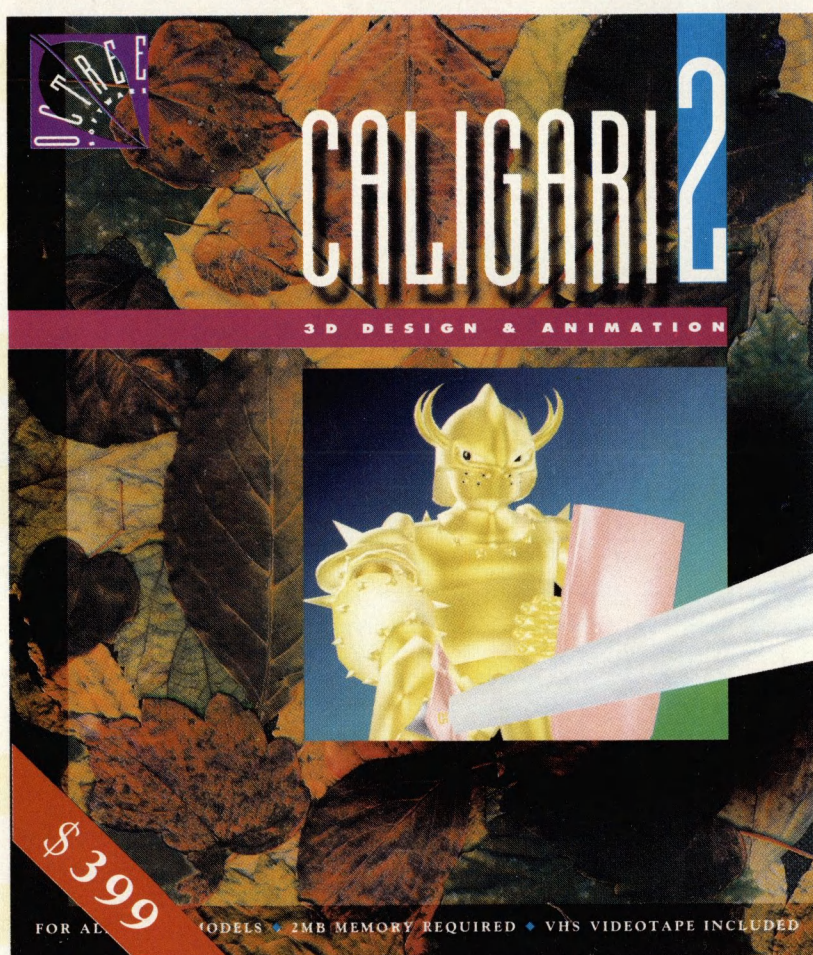




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Dithering, as a human activity used to have an incredibly bad press. But now the word has taken on a new meaning, a new lease of life. a new beginning, even an artistic orgasm, claims a somewhat overexcited Graham Baldock!

MASTERING AMIGA ART



If there is one quality which as a graphic designer I find the most useful on a paint program and which saves me the greatest amount of time, it has to be the ability to construct an illustration using dither. The stunning visual effects that can be accomplished at a key stroke have always and without fail had me rolling around the floor gasping with admiration. (Rolling around on the floor? No wonder our design has sometimes looked so chaotic! Ed.) It wasn't so long ago that to get the same 3 dimensional result I now achieve in seconds I literally had to spend hours cutting templates, mixing colours, getting the right consistency and having my index finger pressed firmly on an airbrush button. But if the colour effect were not quite right or if a stray piece of gunge had taken up residence in the nozzle at a crucial moment then that was just too bad and the work would either have to be started again from scratch or ahem...covered up in some way.

Watching the computer fill your illustration with light and shade using dither, to me has to be the equivalent of an artist's orgasm. It has got to be one of the most exciting phenomena to occur on the small screen since Gengis Khan rode into town...and furthermore... I'm sorry I've got carried away... please ignore what I have just written, but to me it is so tremendously exciting watching the screens metamorphosis from the plain ordinary to something of incredible beauty that I can hardly wait to write some more about it...

From backgrounds to creating an illustration purely from graduated tones the dither is probably the most flexible tool you have. I only wish it had been available twenty years ago, I would be an incredibly rich man right now and instead of writing magazine articles I could be sunning myself on my own yacht. How-

ever I'm not, it's here, somebody else invented it, so let's get down to a few examples and perhaps turn it into a nice little earner for you...

I suppose everybody knows how to use dither mode, but just in case you haven't read the manual or have been stuck down a coalhole for a hundred years and are new to graphics programs, here is a very brief tutorial.

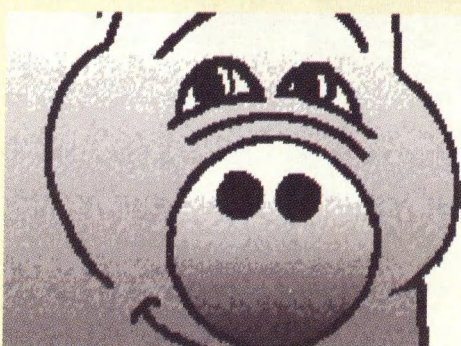
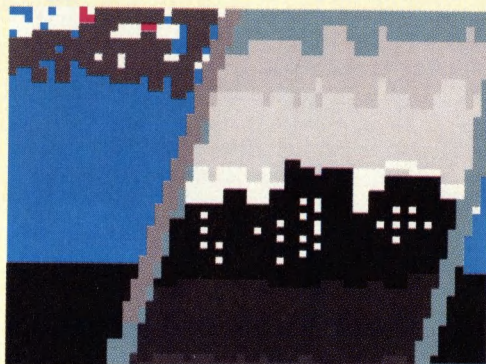
...Just for practice

Dither

1. First of all, draw any shape on your screen which is completely surrounded by a solid line. You now need to choose the range of colours you want to fill your chosen shape.

2. Press the 'P' key to bring up the palette. If you want to use the default setting, this is the range of greys on the right hand side, but to choose a different range, click on the panel with the '2' in it, click on the first colour of your choice, click on the spread panel and then click on the last colour you will need. (Not the colour immediately next to your first choice please SB). Private joke that. Then click on the range panel and define the same spread of colours by clicking on your first choice colour and click on OK. It is a good idea to include at least one light colour in the range if you want to have a highlight in your shape.

3. Once the palette has disappeared you now need to click on one of the colours in the range you have chosen, click then on the fill tool symbol with the right mouse button which brings up the fill requester and click on any of the two left hand dither tools alongside the gradient request. This will allow you



MASTERING AMIGA ART CONTINUED

◀ to have your gradient fill from top to bottom or from side to side. The coarseness of the fill is determined by the slider underneath. More coarse to the right, finer to the left. In high resolution, although your colours are restricted this is the better end to try.

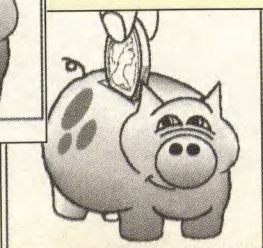
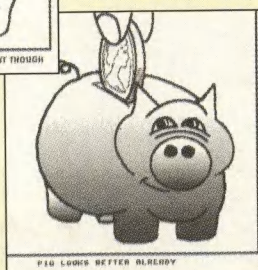
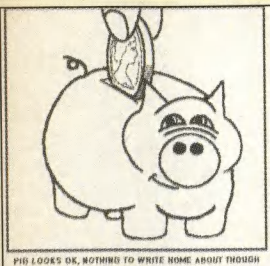
4. Now click OK and fill your shape.

If you want your gradient fill to follow the outlines of your shape rather than to just fill it from end to end, use the third gradient fill tool, which gives you a horizontal fill, but which will now follow the outlines of your shape.

In the course of my work, I once had occasion to draw a house and a piggy bank, which had to be completed overnight for a rush advertisement. I drew the house first using normal methods, but there was something missing, it lacked substance. The problem was solved by filling in the various planes of the walls with a dither fill which went in opposite directions and by changing the dither slider to a coarse fill I was able to fill in the grass areas more realistically.



The piggy bank was a different matter as the curves of the pig dictated a dither fill which would run with the outlines of the pig. Using the right hand gradient fill requester as I described previously, the job was finished in record time.



Half Bright mode

Another attribute of dither is the ability to work in half bright mode. This is especially useful for producing magical metallic effects or reflections. To get the black to white with the intermediary greys, I loaded the screen format in on the default setting, then changed the screen format to 64 colours. This gives you the greys in both full and half bright modes. Drawing in the letters in outline and filling them with the half bright mode enabled, gave this super effect. The background was then dithered into place and a skyline of London silhouettes was put in dot by dot. It beats gardening any day! Much more rewarding.

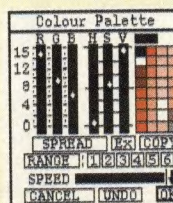
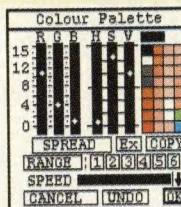
People

One of the most difficult things to draw, without using a scanner or any other external aid but just by using a mouse and your creative abilities is drawing people and especially portraits. On the next couple of pages I will take you through, step by step, the method I used to draw a face in colour and with all the tones and shades associated with it. I hope you will find it useful.

The Method

1. First of all, draw a circle and split it down the middle if the subject is looking directly at you, and to one side if the face is a three quarter view. However, this line would need to be curved. My face was dead centre so this is the method I will be describing.

2. Next, using dither, fill one side of the circle segment with your fill tool using your customised palette containing a range which goes from dark to light of skin tone colours. When the half



circle is filled, grab it as a brush, flip it and fill in the other side to make a complete circle.

3. Using a colour photograph which I enlarged on a black and white photocopier to approximately the size of the circle from the top of the hairline to the chin, I then traced this on to acetate which I held up against the monitor screen and with the freehand drawing tool and the finest 'brush' drew in the major outlines of the features of the face in a medium grey.

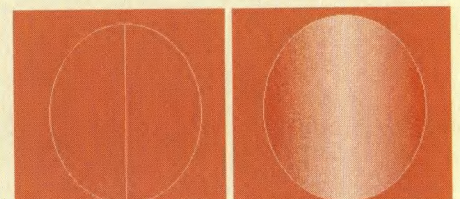
4. Gradually over the next few frames, I drew in the shaded areas on the nose, the eyebrows, the cheeks etc with a solid colour.

5. The approximate colour of the eyes went in next and the dithered areas which would be hidden by the hair were taken away. The portrait was gradually taking shape.

6. The hair was next to get my attention, filling in the main areas with a strong solid colour, again paying attention to the areas of light and shade.

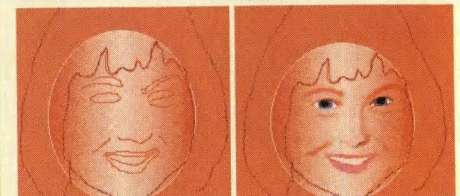
7. It was now time to take stock and look at what I had done so far.

The eyes were slightly too small which I corrected. Details of the hair were then put in with the dotted freehand brush and a darker brown, swept in strokes using the mouse in rather the same fashion as though it were the action of brushing the hair. I used a large dot brush for the background colours of the hair, finishing off with the finest dot tool to simulate individual strands. The areas round



First draw a circle and split it in two.

Fill it with a range of skin tones using dither with the lightest colours in the middle.



Draw in the outlines of the hair and face first to roughly fill in the positions of the face furniture.

The eyes are the hardest parts to get right fill in...more and more... detail... until...

◀ Palette requesters showing the range between which the right skin tones can be achieved. Metallic effects using half bright mode

the eyes were proving to be the most difficult to get right. Here I found the smear, shade, blend and smooth tools absolutely invaluable in getting the effect I wanted.

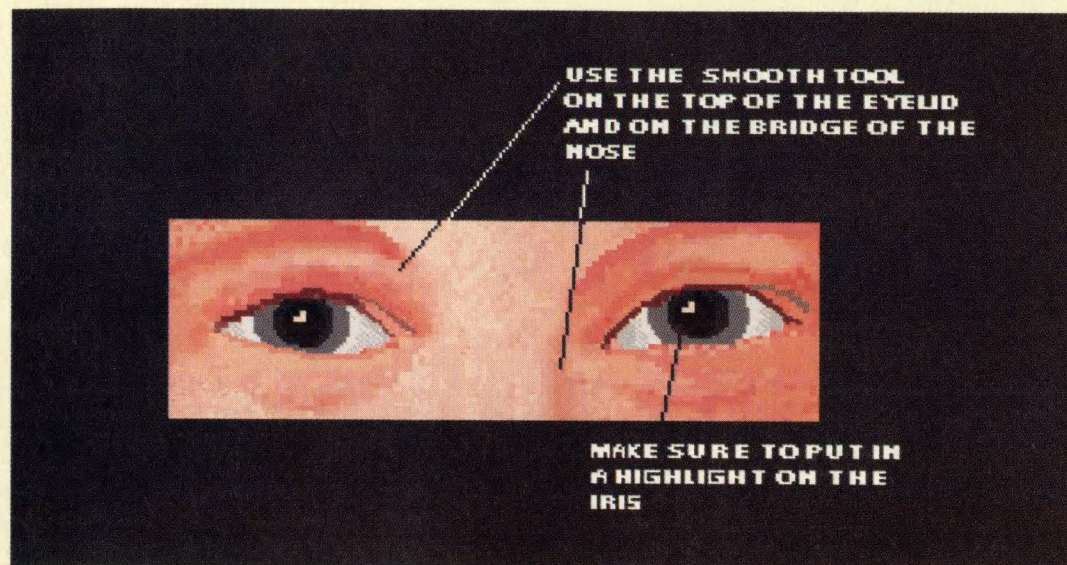
8. Last of all, the background was dropped

on and with a few tweaks here and there my picture was complete.

I must confess, I have seen better free-hand computer illustrations of faces, all of which involved hours and hours of patient work. This portrait took me ap-

proximately ninety minutes to complete from start to finish and I think you will agree with me that this method is probably the easiest and quickest of the lot. Given another ninety minutes who knows what could be achieved? I would be fascinated to see any examples of computer portraiture work you are proud of, especially if you use my method and I will try to get a prize presented by the magazine for the best effort.

That's all for the time being of my series of articles, we've certainly covered some diverse subjects together, including impressionism, clipart, popart, cartoons, using brushes etc and I really hope you have gained some useful information, methods and perhaps even a few ideas over the past six months. There are still loads of untapped subjects which no doubt will be covered in the future, but for now may I wish you all well with your graphics and everything else for which you may use your incredibly versatile, multi tasking, nothing-can-touch-it Amiga!



90 minutes from start to finish!

TEST DRIVE

Can Rombo's quickness of the hand deceive the eye and change the shape of Amiga animations? Mike Nelson puts itto the test.

Take 2

The Amiga is the amateur videographer's dream in terms of its price performance ratio. Conventional equipment for generating animations is both cumbersome to use and unbelievably expensive, so the introduction of the low cost Amiga with its powerful graphics was a boon to would-be directors. There are two basic phases to computer animation, actually getting the individual frames into the machine, and then moving between them. Rombo's latest release aims to merge these functions using the popular Vidi system (this is not essential, but well recommended) for the capture, and a program called Take-2 for the animation.

Animation is relatively simple to understand, and the age old trick of drawing a pin man on the corner of successive pages of your physics book, before flicking through them, is a good example of the process. Whether you are using conventional film, video, a physics book, or computer, the technique is identical in that you have a series of frames which each differ very slightly from the previous one, so when they are played back quickly, the eye is deceived into perceiving motion.

Most Amiga animations are generated using software like Deluxe Paint which allows you to define shapes that the program then renders into successive frames. The computer then simply plays back the animation using a sequence involving writing one screen, wait-

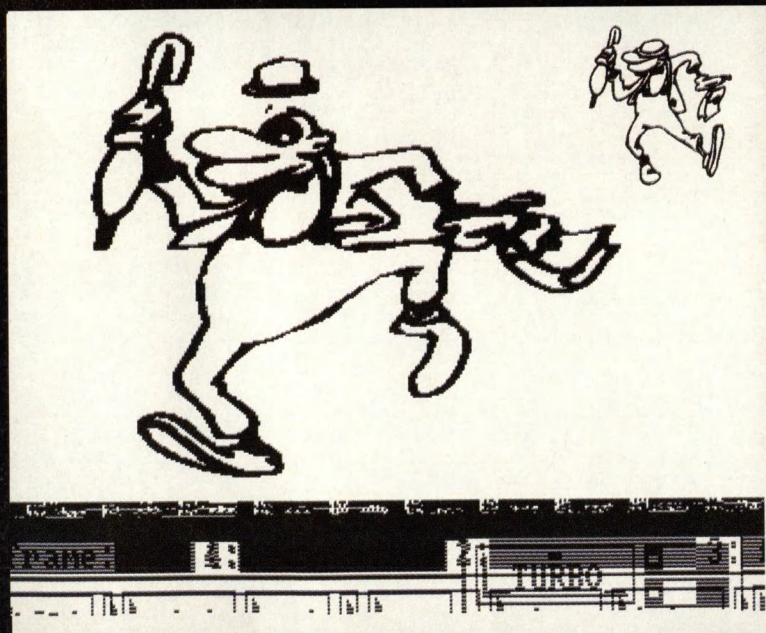
ing a bit for the viewer's brain to register it, clearing the old one and then putting up a new picture. This technique is called "page flipping" and works very well indeed. The only problem is, just like with conventional animation, every frame must be individually drawn, and there are difficulties when more than one object is being worked with at a time.

Rombo, or rather a Belgian animator working with them, have developed a more sophisticated method of generating frames of animation which uses their digitiser, described elsewhere in the **AUI** In Vision supplement. The history behind the product is quite interesting as it does not really fit in with the usual software development seen on the Amiga. The need for a computerised "line testing" system sprang from the numbers of animators wishing to try out their hand-drawn designs before committing themselves to an expensive, and lengthy filming process. Even the very best animators really don't know what their work will look like until it appears on screen, and the author, Geert Vergauwe, was no exception. The problem of correcting minor mistakes before they were filmed was only partly addressed by the cumbersome equipment of the period (some 5 years ago). He got an Amiga

out of a program called Skippy, and was programmed by Geert himself, after taking the trouble to learn programming, assembler and the Amiga. The Vidi kit from Rombo was just being released and its programmers' library was to prove irresistible for him so the merger was complete. It was Rombo's contention that Take-2 had been written by someone who is principally an animator, working in a studio where many similar people could test and hone it, so it should be ideal for beginners and professionals alike. This had to be put to the test.

The Program

Take-2 is a program which integrates the work of the digitiser with that of a page flipper. You use the Vidi (controlled from within Take-2) to



2000 with Digiview and an old program called Page-Flipper and had some success, but the setup was too slow for checking the 24 frames required for every second of animation.

Take2grew

"Even the very best animators really don't know what their work will look like until it appears on screen."

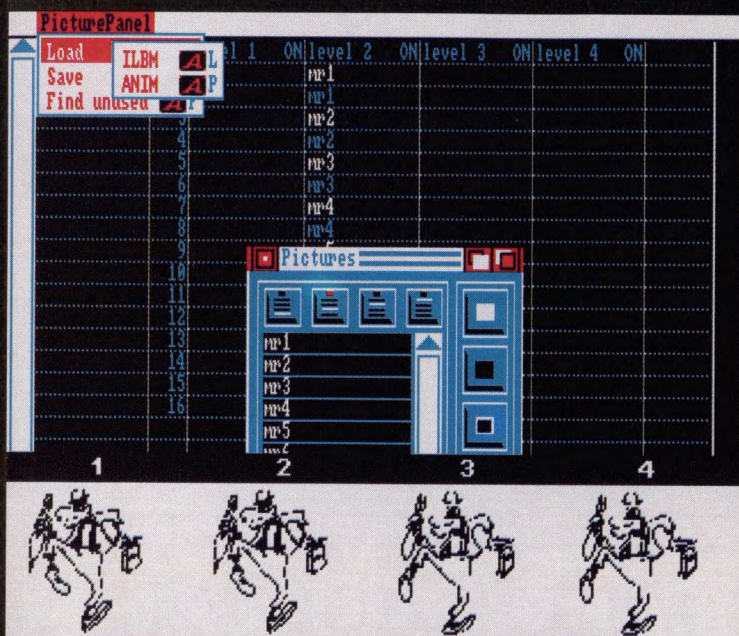
grab successive frames, and the program then plays them back so you can see if the animation is going to look correct before you finally commit yourself to film or video. Regular readers will remember an article last year on how the technique of single frame video was used to proof sequences from the Roger Rabbit film. This system takes the idea another stage backwards.

There are two real ways of using the features of Take-2, the first being as already described to try out real-world animations. You can even make "Creature Comfort" style animations using Plasticine as the same cam-

era could be connected to both the single frame video, and the Amiga which would then play all the animation to date, making the positions of the limbs in the next frame much easier to set up. This is all fine, but doesn't really tax the Amiga side of things too much as it is perfectly capable of displaying complicated animations of its own, perhaps in multi-media presentations, for instance.

I was particularly impressed by the level of integration with the rest of the Amiga system offered by Take-2. As well as using digitised frames (which can be translated into the Amiga's other graphic modes), Take-2 also fully supports the IFF standard ILBM bitmap files and, more importantly, the ANIM protocol

frames via a specific Picture Panel which allows you to copy the frames wherever you want to in the exposure. This is far more flexible than trying to duplicate and paste pictures. There are four different levels where you can load your pictures, and this gives yet more flexibility in that you can effectively manage several parts of an animation simultaneously. For example, if you wanted to animate two people, both moving independently, you could put each into a different level



used by everyone else. Therefore, you can digitise your frames, possibly rough pencil outlines, colour them using DPaint, before playing them through multi-media software like "The Director 2". Likewise you may wish to use an IFF file as a background for every frame, just getting Take-2 to put in the moving characters.

There are three main modules involved in Take-2. The central operating area is called the exposure sheet, or just X-Sheet for short. This is used to control exactly what happens, and when, and to all intents and purposes looks like a spreadsheet. The details about the animation, mainly the file names of the individual frames are displayed here, along with sampled sound names which can be attached to any given picture for adding some excitement to the proceedings. Each horizontal box represents a different frame so you can see at a glance exactly what will happen even before it is animated for you.

The user interface of Take-2 is well thought out and good use is made of Intuition-type functions so new users should have few difficulties getting to grips with all the options available. Some of the icons are a little non-standard, for instance the cut and paste which are usually found on menus. Most of the editing involves the cells that contain the name of each frame and there are some useful tools for putting in repeating segments.

Pictures are loaded into memory, but not directly into the X-Sheet. You access your

not want to be concerned.

There is another method of doing multi-level animation provided by Take-2 which Rombo call "Dub". This is like a double exposure on a photograph so you get a second image superimposed on the first. One use for this is to grab frames onto a specified background, or a technique known as Onion Skin effects may be simulated.

Your X-Sheets may be saved to disk or merged with each other to make longer animations (although more memory will naturally be required). The files generated are simple ASCII text so if you're feeling amazingly keen you could edit them with a something like CygnusED, but that shouldn't be necessary.

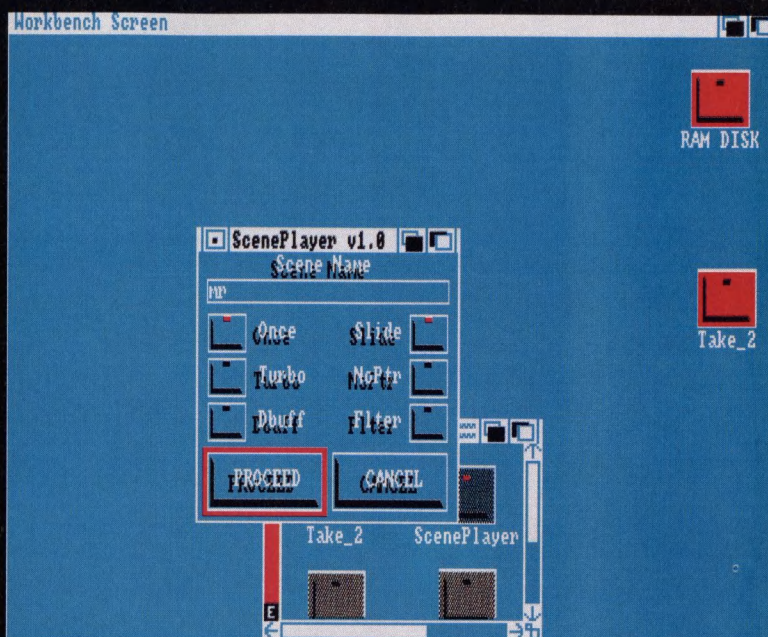
The Digitiser

Full control over the Vidi-Amiga digitiser is provided by another section of Take-2. In fact, this is a lot better than the software supplied with the hardware, and it contains a number of control buttons to semi-automate the animation process. For example the VCR button is a continuous grab mode where Take-2 keeps pulling in pictures off the digitiser, although you can't do full HAM screens as it's too slow, but 16 grey scales come in at a fair lick. Each one is given a name and automatically appended onto the appropriate picture list, so if you have a variable slow advance on your video, you simply sit back and let the computer do all the work. What could be easier?

One advantage Take-2 has is you can con-

and the Flipper would then merge the screens so they appear together. This is akin to the traditional cartoonist building up the scene using acetate sheets; it also allows you to have a constant background which is one big area with which you might

"Each horizontal box represents a different frame so you can see at a glance exactly what will happen even before it is animated for you."



vert the HAM images brought in straight into the Amiga's other graphics modes (except Extra Half Brite). Other than that, the digitiser section is much the same as in the software supplied with it. One point to add is that the RGB-splitter is unimaginably useful, and vital when grabbing from video. Using filters is possible, but really not recommended for both speed and image quality.

The Flipper and FrameBoard

Flipper is the final module (named after a famous dolphin, I believe), and this does the job of shifting through the frames once your masterpiece is safely housed in the Amiga. The interface is again pitifully simple to understand and the familiar analogy of a video or cassette recorder controls is used to good effect. The Flipper supports the industry-standard frame rates of 24 and 25 per second, so dumping animations to video should not prove too arduous.

The FrameBoard is yet another shortcut in displaying your animation files. What this does is draw small versions of the four frames immediately around the current one; it is extremely useful as it is updated automatically in real time, so as you make alterations to the exposure sheet, the frames below changes accordingly, so you can constantly have a reminder of how things are shaping up.

Conclusion

Vidi-Amiga is a very popular product, particularly among schools and colleges, and Take-2 is an ideal companion to the hardware. The product is soundly designed and, like the Vidi itself, represents great value for money. The ability to load and save standard ANIM files, as well as merge sampled IFF sounds, means that Take-2 fits in very well with other Amiga software on the market and hopefully development will continue to improve on an already impressive product.

Price: £99.95

**Contact: Rombo Productions, Baird Road, Kirkton Campus, Livingston, West Lothian, Scotland. EH54 7AZ
Tel: (0506) 414631**



TEST DRIVE

HAM-E, the 24 bit graphics device from Black Belt, has been in the UK for over a year now. It has seen a flow of support from many software companies and Oxxi is the latest company to add its name to the list. Gary Fenton once again dons his artist's beret to paint the HAM-E picture for this review.

Spectracolor



Once upon a time there was a big beastie of an art package called Photon Paint. It was a very powerful HAM tool that could paint and manipulate images in 4096 colours. Some time later it gave birth to a son called Photon Paint 2 which was even more powerful than its father. It offered simple animation techniques which were impressive at the time. As the years passed it was given plastic surgery, a new name, and more animation functions. The result was SpectraColor.

SpectraColor recently had a brother who was born into the world to give a little ray of sunshine and joy to all human folk who purchased a box called HAM-E. Because the paint packages previously available for HAM-E had either been unforgivably bland or unstable, HAM-E was in need of a decent art package. Luckily Oxxi re-wrote SpectraColor to take advantage of HAM-E's 16.8 million colour palette and 1/4 million on screen colour abilities. There is no difference between the HAM-E version and the HAM version so you may as well read the SpectraColor HAM review back in the September 91 issue.

SpectraColor (without the "u" because it's American) looks identical to the HAM version until you bring down the palette. Only then does it hit you that you are staring at thousands of different colours. Smooth graduations are no problem with 256 levels or pure red, green, blue and grey. You can mix the colours using the colour

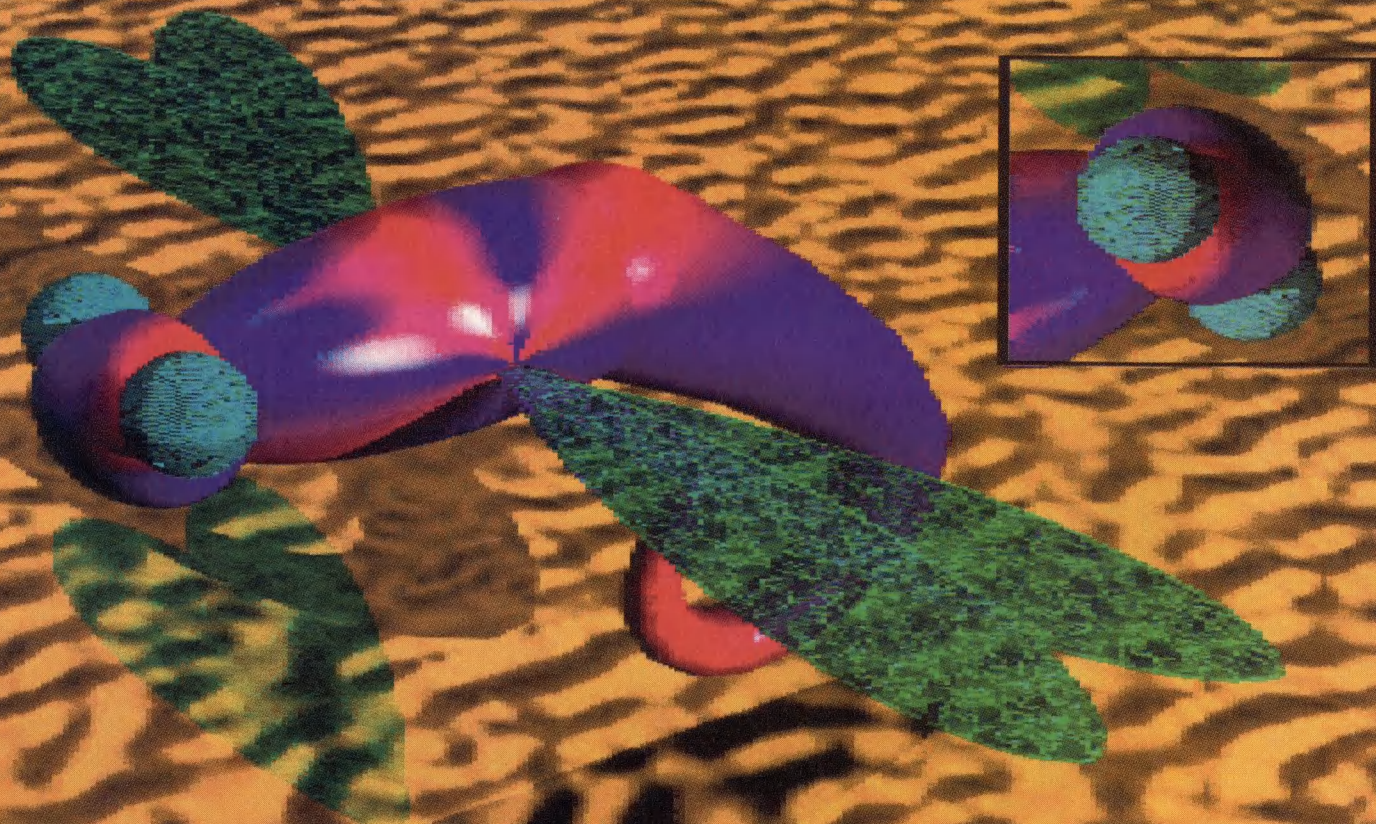
cube as featured in previous Photon/SpectraColor packages. The hues are quite stunning, sitting there in little boxes at the top of screen. You can swish your mouse pointer around in the colour cubes to vary the colours or use RGB or HSV (hue, saturation and value) sliders to choose any colour in existence.

As HAM-E owners know, HAM-E pictures are vulnerable to fringing and colour ramping, much like the Amiga's HAM mode. It appears that SpectraColor does its best to curb these side effects but can only go as far as HAM-E's hardware allows it. Going from a red pixel to an neighbouring green pixel will take up to 3 more pixels in-between to complete the change from red to green. It does this because it can only change one of the RGB values at a time. Pools of one colour hue look very pretty with no colour slip ups at all. Saying all this about fringing may not be fair to SpectraColor, but fringing can be tamed using careful colour selections or a skilled hand in magnify mode.

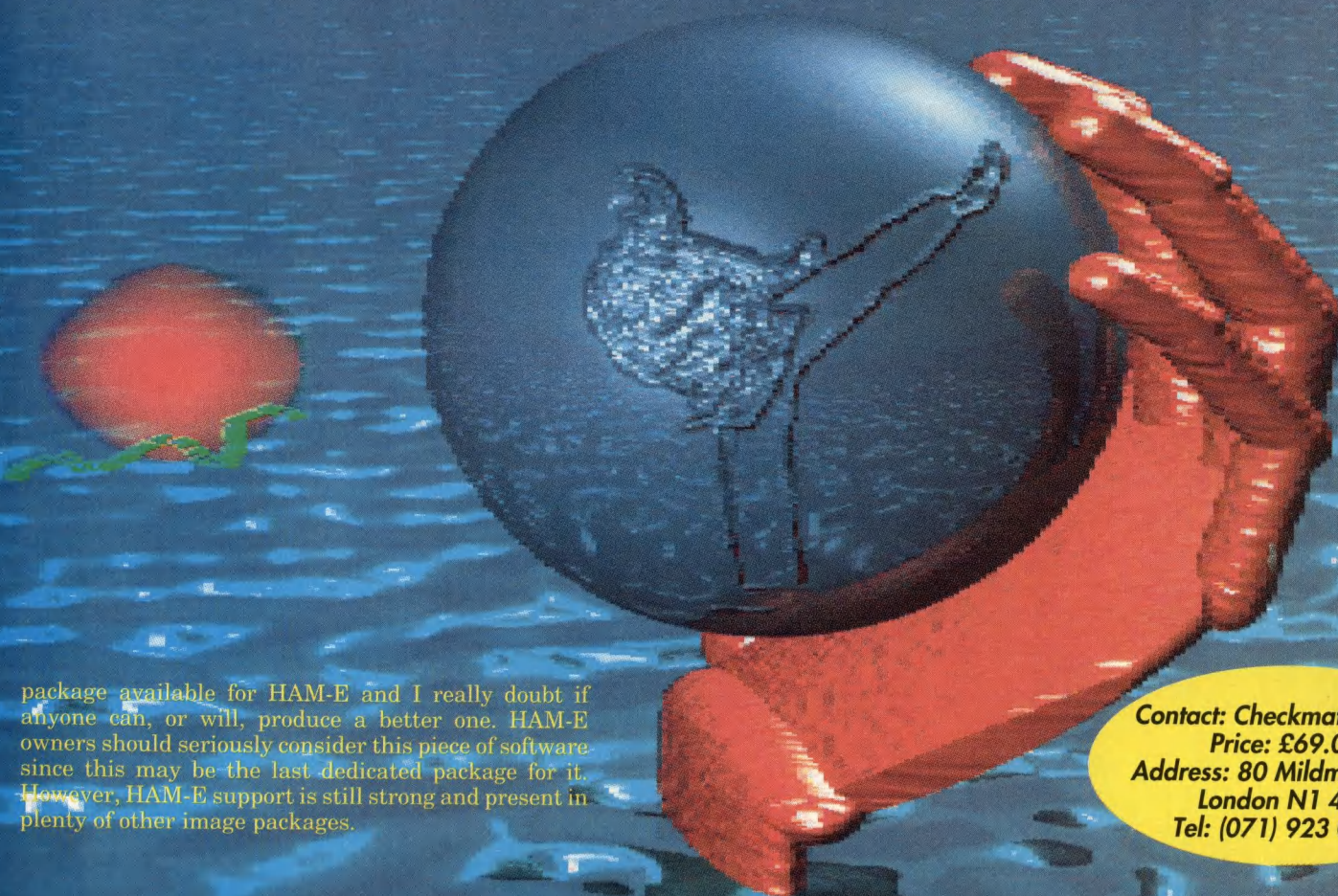
SpectraColor can do a few unusual things in conjunction with HAM-E. How about an animated brush with up to 262,144 colours? That's one up on DPaint IV, anyway!

If you have the HAM-E hardware and this special version of SpectraColor interests you, then make sure you have 2MB RAM including, preferably, 1MB of chip RAM for the hi-res lace screens HAM-E uses.

Oxxi have produced the best art and animation



or HAM-E



package available for HAM-E and I really doubt if anyone can, or will, produce a better one. HAM-E owners should seriously consider this piece of software since this may be the last dedicated package for it. However, HAM-E support is still strong and present in plenty of other image packages.

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TEST DRIVE

Mike Nelson takes another look at this internationally famous Scottish graphics product.

The Amiga's somewhat quirky HAM graphics mode has found considerable favour among both 3-D renderers and also people interested in digitised graphics. Until relatively recently, there were two main choices available in the budget price range, the most successful American product being the famous Newtek's DigiView Gold, closely followed at least in Europe by Rombo's Vidi-Amiga package. Initially, there was not really much doubt that the Newtek device had a considerable edge in terms of the images bandied around bulletin boards and on demo disks. Coming to the marketplace very soon after the Amiga itself, Digiview was phenomenally popular with its profits funding the development of Newtek's other video toy, the Toaster thing.

However, there were a number of drawbacks in using Digiview, mostly concerned with the apparatus needed to generate a suitable video signal; a black and white camera was obligatory, very sensitive lighting, and the requirement of performing three passes with a different filter (see panel) proved cumbersome. The stage was set for an alternative.

"Although it was only able to deal with low-res 16-grey pictures, the digitiser was fast enough to work almost in real time."

The only real alternative to Digiview came out in late 1989, and this was the first release of Vidi-Amiga. It didn't exactly receive an awesome reaction, perhaps because it was limited to 16 levels of grey, something of a difference to the 4096 shades of glorious Newteknicolour that Amiga owners were getting used to, and people who weren't Amiga owners wished for even a fraction of these colours. The software was primitive but very effective. Although it was only able to deal with low-res 16-grey pictures, the

digitiser was fast enough to work almost in real time; you could connect up a video recorder and pull in as many frames as the computer's memory would allow, before getting the Amiga to play them back. This was a step sideways from the slow, but colourful Digiview.

Soon after the initial version of Vidi was released, a remarkable software upgrade called Vidi-Chrome hit the streets and the product started to make an impact. The technology was cheap to make, so Rombo could undercut the Newtek price, and there was no need to use a black and white camera - how many of those are there lying around? The argument is that security cameras have very high definition, but if you ever see Crimewatch on TV, you really do wonder if this is true, given the awful quality. Still, it may explain how John Kennedy remains at large.

Enter the splitter

However, there was room for improvement over the really irksome system of using filters to generate the primary colour screens. Newtek's answer was to provide a motorised system for rotating the filters, but this solution never really addressed the problem satisfactorily, so they gave up and went along the Toaster line. Rombo came up with another box of tricks called an RGB splitter, and this made a

real impact on the Amiga digitising scene. In one fell swoop they had eliminated the need for those dreadful filters and motorised rotating wheels by doing the same job electronically; the splitter takes the composite video signal and converts it in turn to each of the required colours. The Vidi-Chrome software was tweaked slightly to support the new hardware so a frame from a camera took only a few seconds to grab. It also meant that if you had a decent freeze frame on your video, you could now use this as a source for full colour grabs.

"The real irony of the splitter is that it works beautifully with Digiview as its design is pretty generic."

A couple of other useful features of the splitter include the "features" connector which gives full access to all the internal signals so budding electronics freaks can take off in other directions, although this doesn't seem to have been taken up in any commercial way. Also provided on the splitter is a colour control which is additional to the brightness and contrast controls of the digitiser itself. The real irony of the splitter is that it works beautifully with Digiview as its design is pretty generic, although you have manually to press the button to change



Vidi Amiga

Vidi Amiga

C O N T I N U E D

◀ the colour being output. Certainly beats those filters.

What Else?

A year ago Rombo launched the package deal with a paint program, the digitiser, splitter and all its software. Calling it "The Complete Colour Solution", they offered it at a price of £179, although dealer prices were marked lower. Included with Vidi-Chrome was a copy of Photon Paint, a very respectable HAM art program which really looks a bit long in the tooth nowadays with the likes of DPaint IV and its updated counterpart, Spectracolour. The most recent release is Take-2, and this is fully reviewed elsewhere in the magazine.

Who's using it?

The low cost, coupled with ease of use and superb results, makes Vidi an ideal choice for educational establishments. It is affordable for everyone, simple enough for primary schoolchildren, yet the pictures are of high enough quality for professionals to work with. There is little doubt that the advent of the splitter really tipped the balance in favour of Vidi-Amiga for me, mainly because it is so easy to use. Digiview is full of fancy dithering techniques to really optimise the colour, and a processor intensive graphics sleight of hand called dynamic hi-res, but in all honesty, with a reasonable camera and half decent light, Vidi will get the job done almost as well, but with a lot less bother.

Electronic Sleight of Hand

Another irony in the world of the Amiga is that this really strange idea was put in as one of those "just to see if it works" experiments. The fact that it did work, and got left in the Amiga's architecture is one of the reasons the Amiga still exists. It's a con trick, in fact, which has no real right to work as well as it does, but the essence is that there are 4096 different colours available on screen at once. Even S-VGA on PCs only allows for 256 (albeit from a massive palette of 16 million). The fact is though, that all those fancy 3D-rendering programs rely totally on the 4096 colours for generating the tremendous pictures and animations.

I said it was all a clever con trick, and electronic sleight of hand is another way to describe HAM. You are dealing either with a 320 x 256 or 320 x 512 interlaced screen with 6 bit planes. A detailed description of Amiga graphics is beyond the scope of this article, but suffice it to say that this would normally only allow for 64 colours.

The Amiga hardware interprets the bitmap data differently when in HAM mode; the acronym means Hold and Modify which seems to be a contradiction of terms! Every pixel of the display has a

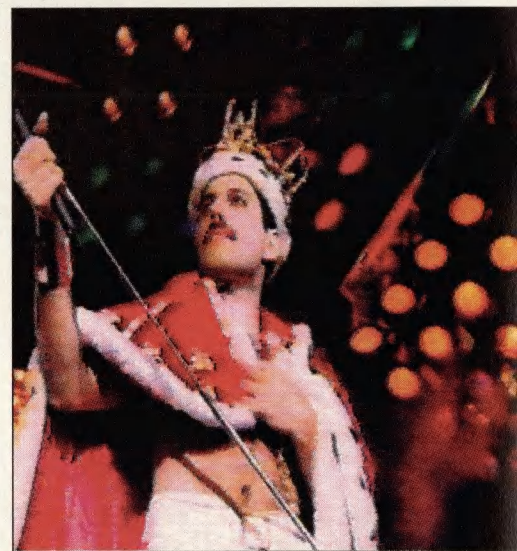
value for each of the red, green and blue primary colours that determines its overall shade. In HAM, the computer looks at the colour of the previous pixel, holds two of the three components constant and varies the third. In practice, then, it takes three pixels to completely change a colour so HAM images, whilst being very colourful, tend to lack the precision of pure graphics modes. Various mathematical techniques will minimise the problems of fringing, and the ray tracing programs are an excellent example of this.

Vidi and The Amiga

If you look at the colour requester of programs like Preferences on the Workbench disk, you will notice three sliders labelled Red, Green and Blue (RGB). Each of the 4096 colours is composed of a certain mixture of red, green and blue, a value between zero and 15 to be exact. For the mathematically-minded, $16 \times 16 \times 16$ comes to the magic number of 4096.

Further, if you need four bits to represent 16 numbers, 4096 numbers need 12 bits.

How does Vidi-Amiga get this information? The basic hardware is only capable of differentiating 16 levels of grey, no matter what colours are present in the image. The cunning secret behind Vidi-Chrome is a software solution to the boring grey problem. Vidi tells the program three different sets of data, one for each of the primary colours, and the software then merges them together before



building the HAM image. When you actually digitise, you have three passes at the image, and so the splitter is extremely handy. Using a filter (electronic or cellophane) only allows through the light of that filter's colour, so the amount of red in the picture is digitised - the hardware doesn't know it is being fooled into only taking red and as far as it is concerned it is sending 16 grey levels to the Amiga. The program knows this is to be red and the rest is relatively easy, except for some clever dithering at tricky sharp borders.

The elegance of this method owes much to the basic design of the Amiga's colour handling system, but Rombo's programmers must be congratulated for exploiting the situation to the full.

Digitising

The *AUI* In Vision Guide to Digitising.

There are many advantages to the Amiga, both for sound and graphics, and these two areas lend themselves very well to the technology of digitising. Last month in *AUI*, we described how sound could be "sampled" or digitised into a computer's memory, and this issue looks at the world of graphics.

The principle of digitising is the same for any form of "real world" data and graphics usually comes either in the form of a video frame, or the image from a video camera. The idea is that the computer is fed information from the source which it is then able to store as ones and zeros before they are converted back to the computer's own output on screen. The interesting things start to happen because computers are very good indeed at manipulating the ones and zeros; they are just numbers to all intents and purposes. This article is concerned with the practical details of how you get your images into the computer and what you can do with them once they are there.

"There is a trade-off between image quality, resolution and memory requirements, but most Amigas will manage HAM images without too many problems."

The Amiga side of the operation

The Amiga has several graphics modes with different resolutions and numbers of colours available. There is a trade-off between image quality, resolution and memory requirements, but most Amigas will manage HAM images without too many problems. However, I don't want to go into hefty technical details of how the Amiga's graphics hardware works, and the basic specifications are well-known. Digitisers usually operate at their best in HAM mode, although there are circumstances where this is inappropriate, should extra fine detail, rather than colourful, but slightly blurred pictures, be the order of the day.

Digitised pictures can take up a vast amount of your Amiga's resources, both on disk and in memory. A typical HAM picture is about 60K for non-interlaced

screens, and double this for the higher resolution, so you may be looking at only 10-15 pictures on a disk. Maybe it's time to buy that hard drive...

The Digitiser

This is the device which sits between the source and the computer. It simply takes the analogue signal from the source and converts it to the binary ones and zeros that the computer understands. There are several available for the Amiga, and there is naturally a spectrum of prices and specifications. Professional gear can cost hundreds of pounds, but you will get very reasonable results with kit costing £100-200. The Rombo Colour Solution is matched by the Newtek Digiview Media Station package, and there are certain advantages to each, but see the Vidi article for more details. By and large, the more expensive products are much faster

"The modern way is for the computer to do everything automatically once you have got all the positioning and lighting right"

than the cheaper equivalents, and they tend to look little more sophisticated than little black boxes with various wires hanging out!

You will need to be sure about what you want to digitise as the cheaper ones are not quick enough to do anything that is likely to move at all so you will have to stick to photographs, corpses or bowls of fruit!

The Source

This is naturally important and should be as good a quality as possible. The philosophy to bear in mind is that the computer will lose detail quite markedly, so if you start off with a dodgy image, things will only get worse. Most video cameras these days are very high quality colour affairs which will require some sort of RGB-splitter to connect them to the digitiser. The old days saw us desperately trying to hold coloured plastic filters in turn over the lens while simultaneously pressing the "Go" button on the Amiga and trying to stop the cat walking over the image! The modern way is for the computer to do everything automatically once you have got all the positioning and lighting right. ▶



Digitising

C O N T I N U E D

◀ A camera will require a sturdy tripod to hold it steady for the 10 seconds it takes (on average) to grab a full colour frame. It's a good idea to have an alternative display handy so you can make sure about focussing and lighting before committing yourself. Some digitisers have a real time mode which provides a good second best.

Another potentially exciting source is the video recorder. Over the last few years, technology has improved hugely and very high quality VCRs with superb freeze frames are available at affordable prices. The crux of the matter is that your image must be absolutely still for digitising otherwise the results will resemble a pizza on a bad day.

Lighting

The importance of solid lighting cannot be understated. Let's face it, most digitising will take place in the comfort of the great indoors, and so the problem is how to ensure adequate illumination without altering the image too much. There is no substitute for daylight, and modern cameras respond especially well to this environment. Some digitisers are very fussy about lighting conditions, however, and if you do need to use artificial illumination, setting up a few candles won't do. Conventional bulbs cast a yellow light which really messes up digitising (and normal photography), but you can purchase tungsten bulbs from a photographic specialist that compensate for the yellow to a certain extent.

Failing all that, the next best thing is a fluorescent light, or halogen bulbs offer very powerful illumination. Too powerful for most of the time, in fact, but you can use light reflected off some white paper instead of a Gestapo-style head on approach for a more subtle effect.

What For?

Digitising is great fun. It often takes a while to get everything working, particularly with new hardware, but the effort is really worthwhile. Once you have your images in memory, the beauty of the computer is that it can mess around with them, as is your wont. There are several programs available that provide powerful image processing tools so you can radically transform the image.

"There are many practical applications for digitising pictures."

There is also a multitude of paint packages like DigiPaint, SpectraColor, and, of course, the ubiquitous Deluxe Paint from Electronic Arts. These can be used to touch up the dodgy areas which the digitiser had difficulties with, but an old favourite technique is to cut and

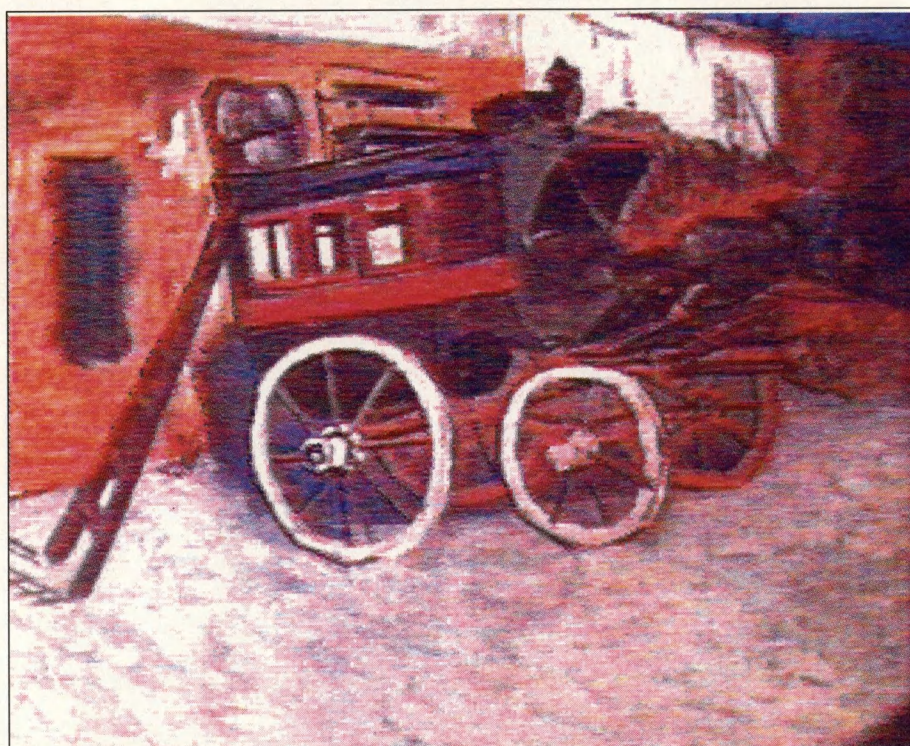
"Imagine seeing your granny standing on stage with Iron Maiden."

paste inappropriate scenes together. Imagine seeing your granny standing on stage with Iron Maiden, or putting a picture of yourself onto personalised birthday cards. Animation is another fruitful area for digitisers and there is a review of a new package from Rombo elsewhere in the In Vision supplement.

There are many practical applications for digitising pictures. For instance, if you wanted to see what your house would look like with an extension on the side, you could zap it into the computer and add the extra building on with a paint

program. Without even a brick being laid you could show the neighbours just how you are going to cut out the light from their conservatory, and really make their plants miserable. Surgeons these days are turning to computers to model operations, particularly in the field of cosmetic surgery, so the patient can be digitised and altered before the knife does anything too drastic.

The list is enormous and ever expanding. It just makes you glad to be able to glimpse some of the technology to which your Amiga is a gateway.



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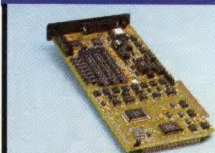
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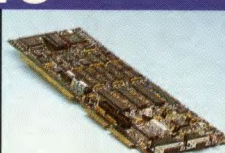
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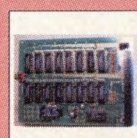
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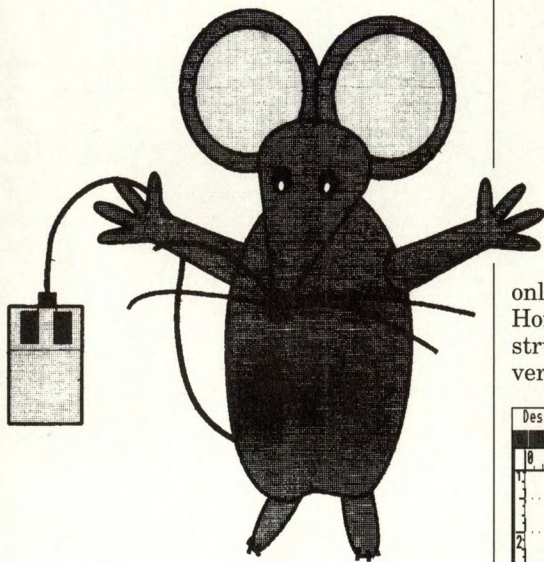
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STRUCTURED GRAPHICS

Jaggies? A thing of the past, says Gwynne Harper, if you get yourself and your graphics structured. He puts the two leading Amiga packages head to head and lets you choose.



To run a structured drawing package requires a slightly different setup than for its bitmapped equivalents. To get the best results, you are likely to be drawing in interlace, so be prepared to turn down the contrast on your monitor if, like me, there's not a flicker-fixer in sight. Screen updates are quite slow, so most programs give the option of a wireframe or fast mode. Accelerators such as an '030 or '040 certainly help, but are by no means necessary. The files created are not huge, but disk access is frequent enough to make a hard disk a virtual must. You can multitask any of these programs with a DTP package or DPaint,



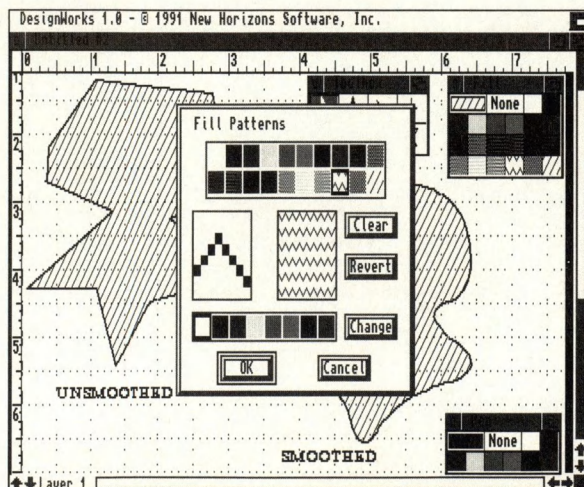
only available examples, however. New Horizons produce DesignWorks, another structured graphics program which is very different from ProDraw, and re-

viewed here. SoftLogik produce an excellent DTP package in Pagestream, and a structured stablemate is not far from completion.

however problems soon arise with the amount of Chip Ram available. Boards are available, for those determined to keep as many windows open as possible, which double Chip Ram to 2MB- very useful.

Gold Disk's Professional Page remains probably the best-known DTP program for the Amiga, and so most people turn to its structured drawing partner, Professional Draw. These are by no means the

These programs, although different to one another, share some common ground. All let you load in IFF bitmaps, support colour, and most output to PostScript. They also, unlike bitmaps, allow accurate control of the width of the lines to be output. All measurements can be in inches, centimetres or picas: these correspond to the real world, so at 100% screen magnification one inch should be one inch long. That's What You See Is What You Get at its best. Pictures are typically put together by tracing over a bitmap - these take a long time to load in, and when displayed slow down the screen refresh significantly. To speed matters up, the bitmap can be 'turned off' to display only a box. To see which sounds best for you, read on.



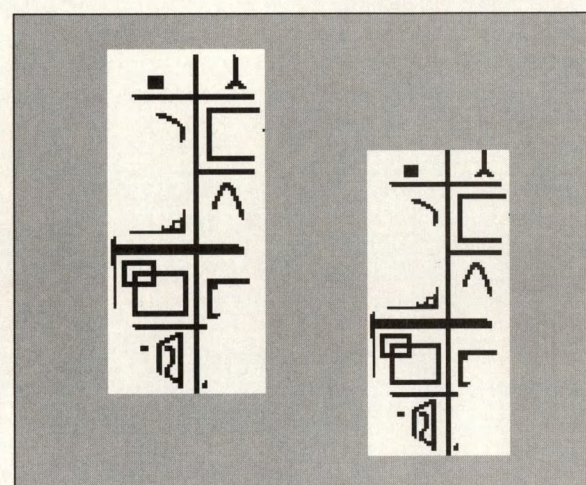
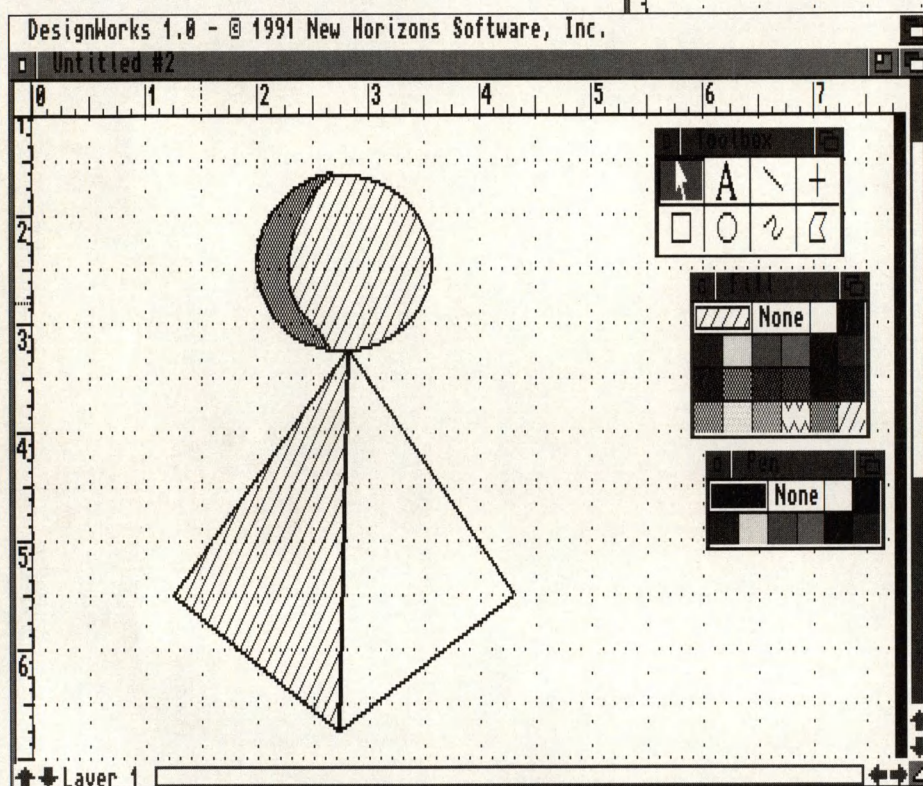
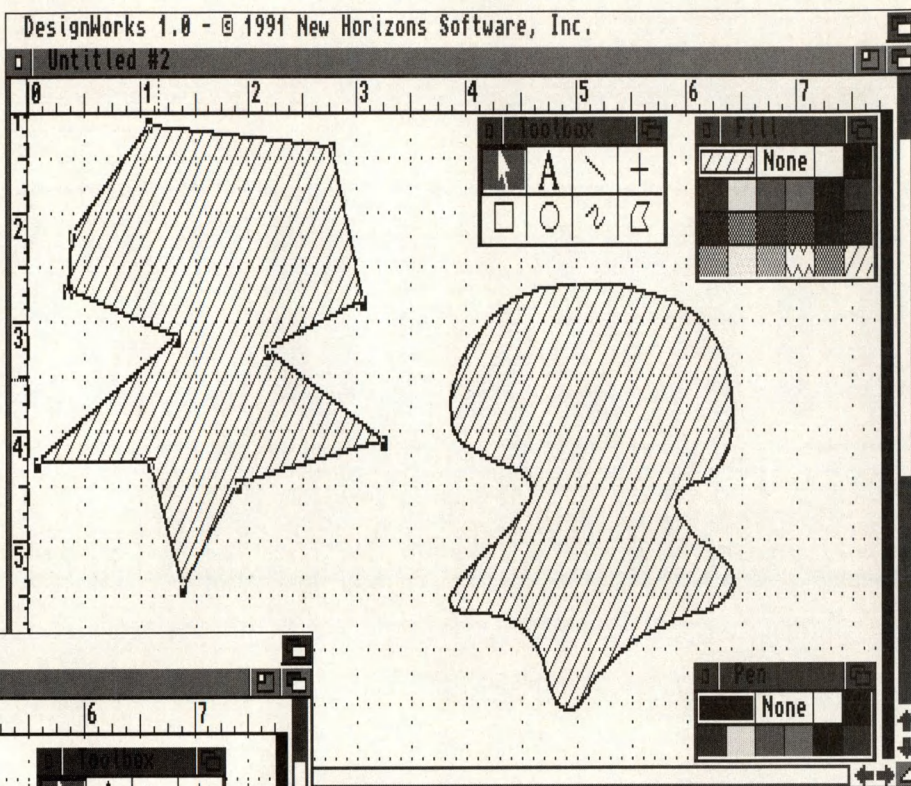
TEST DRIVE

STRUCTURED GRAPHICS

C O N T I N U E D

ProDraw

ProDraw is instantly familiar to all those out there who have seen the ProPage front end. The familiar setup is a large central area where all drawing takes place, bounded on the right by a vertical strip which contains all the gadgets to draw and manipulate your images. The



size and format of the page is freely selectable, whilst the space around the page is available as a 'clipboard', where pictures can be temporarily stored.

Several ways of managing your art are available - the individual page can be saved, a collection of pages can be stored as a folio or an individual drawing can be saved as a clip with the flexibility to be used elsewhere. This can be a problem on occasions, however, as there is no way of merging folios directly, it has to be done laboriously one page at a time. Output may be to dot matrix, plotter, or importantly PostScript. The clip files can also very usefully be loaded directly into PPage.

The control points for an object may be added, taken away, linked or broken up, whilst the Bezier curve tangents

can be controlled with great accuracy. Objects may be precisely scaled in size, mirrored, distorted or sheared to result in a form of perspective. Fills can be of any colour, and object boundaries may be defined to be simple straight lines or any predefined pattern of dots. Most of the available features are menu selectable, however keyboard shortcuts are fully supported for the experienced user. A real problem is finding some of the features, however, as any one key may be pressed on its own or with the Shift, Amiga or Alt key, sometimes with important results. These can be difficult to remember, especially as not all options are available through the menus.

Powerful

The manual is pretty comprehensive, but not

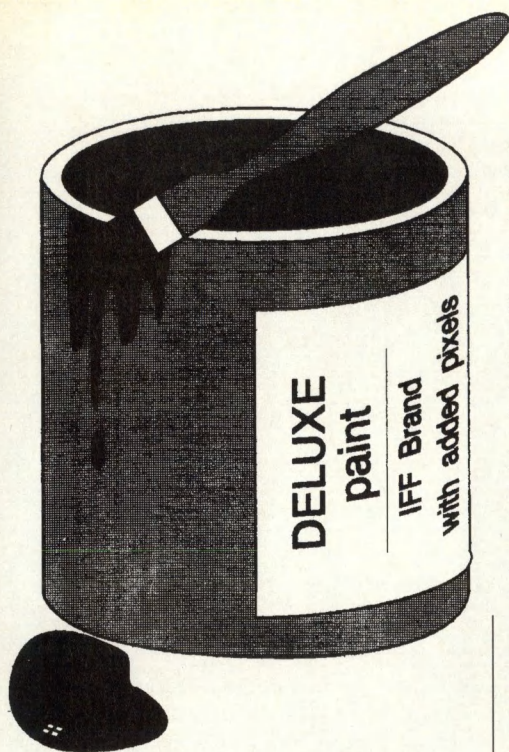
very well indexed or logically laid out. It can take a while to find whether the program can do what you want - the fact that it usually can is small consolation if it just took half an hour of precious time. The inclusion of a quick reference guide for the keys would be more than helpful.

Overall, it is a very powerful program but its complexity makes it not one for the fainthearted. Be prepared to put some work in to get the best out.

Designworks

The offering from New Horizons is a relatively new program whose purpose is to try and grab some of the market off the almost ubiquitous Gold Disk product. The front end and style of this program is really quite different to that of ProDraw, and so, if you are looking for a structured drawing package, it pays to read on.

The program comes with a very clearly laid-out manual, which starts by taking you through the basics of creating and modifying objects before bringing up the more advanced features, such as AREXX



(the latter is not supported by ProDraw, by the way).

The DesignWorks screen meets you after booting, and consists mostly of a large ruled drawing area. To the right lie three windows with selection gadgets for pen colour, fill pattern or the 'Toolbox'. The latter contains the various drawing tools used to create an object. The fill pattern is useful, too, several types of cross-hatching are included, together with various other 'brickwork' or 'speckled' patterns. An editor is also included to let you create or modify any further pattern. Usefully, several Workbench-like ideas are incorporated, for example if a drawing is larger than the screen, then scroll bars help you to move around. Likewise is the fact that the Toolbox and Pen selection gadgets are typical windows, and so can be moved around or even closed if wished. These seemingly little points all help to speed up the learning curve - after all, you want to spend your time drawing, not learning to use the program.

Creating an object is easy - just like any other drawing program gadgets for drawing straight lines, boxes, ovals and the like exist. One curio is the polygon tool. It is the most advanced of the tools, as there is a further menu selection available: this toggles the smoothing of a polygon on or off - the same object appears angular or rounded depending on its state. In this way, the use of a curve tool and the associated tangent control points is avoided.

Full menus exist, importantly all with keyboard shortcuts. These let you edit parts or all of the drawing more fully (rotate, resize, cut & paste and the like), as well as activate the AREXX macros and print out the documents produced. A clever touch is the ability to create a drawing up to one hundred inches square - that is, much bigger than one piece of paper. The program automatically prints the final document as a jigsaw to be assembled with ease. Nonetheless, the control of objects is not as accurate as with ProDraw - for example, rotation in the latter can be to any angle, and about any point. In the same way, the exact plane of mirroring, and even the cartesian axis, are all under user control in ProDraw.

A nice way to order your drawings is provided in the capacity to draw on several layers at once. This is akin to drawing on several pieces of transparent plastic - each one is visible through the one on top. If you have ever drawn a large, complicated image you will know how useful this is, as to edit even one piece can result in real heartache!

Another important difference is in text control. DesignWorks allows full on-screen writing in any of the fonts that reside in your system with ease. ProDraw can do this, but it has an odd system of request boxes that makes it very awkward in practice.

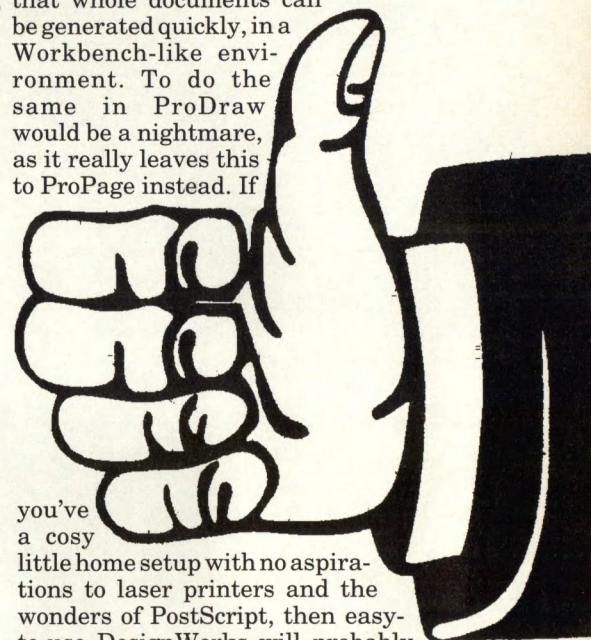
Throughout getting to know this program the manual proved to be well laid out, with a nice reference chapter at the end for once the basics are understood.

"Usefully, several Workbench-like ideas are incorporated, for example if a drawing is larger than the screen, then scroll bars help you to move around."

Also reassuring is the full support of Workbench 2's new goodies, such as public screens.

Conclusion

ProDraw is by far the most flexible of the two programs, but also by far the most difficult to get to know and use. DesignWorks's easy use of text means that whole documents can be generated quickly, in a Workbench-like environment. To do the same in ProDraw would be a nightmare, as it really leaves this to ProPage instead. If



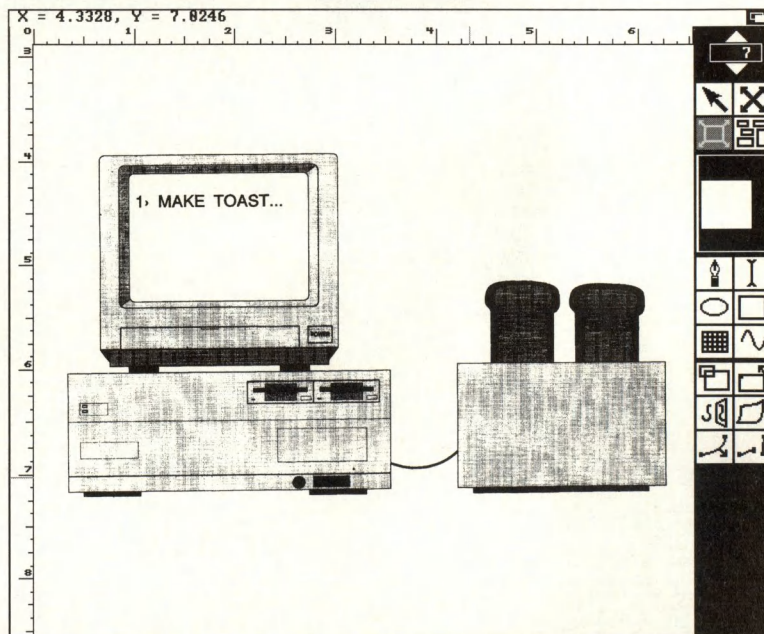
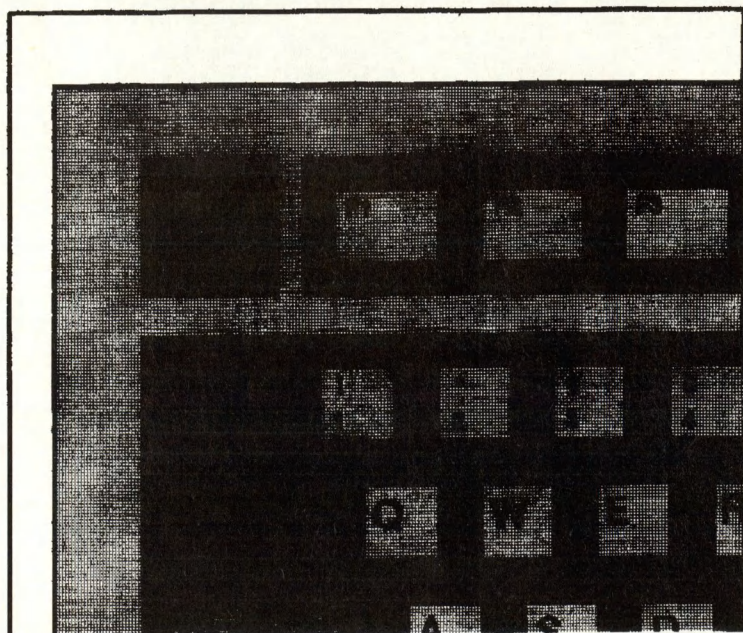
you've a cosy little home setup with no aspirations to laser printers and the wonders of PostScript, then easy-to-use DesignWorks will probably be all you need (and then some). If not however, ProDraw is the one for you, especially if you want to use ProPage. Be prepared for its complexities, though.

Designworks: £79.95

**Contact: New Horizon Software,
PO Box 43167, Austin, Texas 78745
Tel: (0101) 512 328 1925**

Pro Draw: £99.95

**Contact: Gold Disk, PO Box 789, Streetsville,
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Just the thing to spark off the creative juices, exults Peter Lee discovering a thrilling new concept that takes the agony out of Amiga animation at a price that anyone can afford.

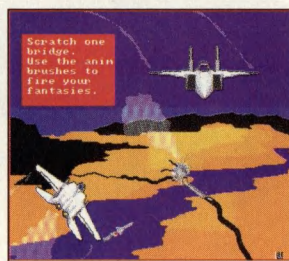
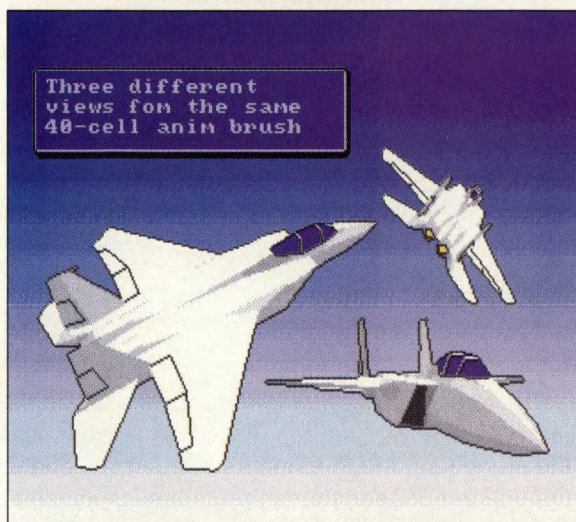
TEST DRIVE

An F15 rips through the skies over a desert battlefield, tearing apart the air as it swoops to unleash its deadly cargo on the scene below before soaring upwards, banking then rolling off into the distance.

Fancy animating that on your Amiga? Me neither - until now.

Because a new series of anim brushes is being produced which promises to explore the rich path of inventiveness first uncovered by RealThings. The RealThings collection has set its sights on the natural world, and made a brilliant job of giving artists some wonderful tools.

So far, off-the-shelf animbrushes (those are the kind which feature in



animated brushwork is that as well as saving you weeks of work, it also sparks off the creative juices.

The background image which is supplied with the brushes (there are two files, of identical images in different modes, which seems pretty pointless) will be a let-down for early users who perhaps lack confidence to create their own. The picture is a smoothed fractal landscape with hills rolling down towards an inlet. I would have liked more of an effort in this department, though having said that many of us prefer to do our own backgrounds.

IN USE

So what earthly use is a 3D F15 I can hear you ask. Well, if you need to ask, then you probably won't get much out of the package. The fact that it exists is enough to fire up the imagination. Simply creating a lively full-colour animated image is reason enough for me.

Once you bring your repertoire of DPaint animation techniques to the fore, you will be able to have the plane swooping and vanishing into the distance over a continually scrolling landscape. Add a few ground objects such as trees and armoured personnel carriers, then let your missiles rip. It's like writing a story, but instead of paper and pen you are using the Amiga.

The author sees F15 as the first in a planned series of 3D animbrushes; on the drawing board are plans for an Apache

Animation Workshop

DeluxePaint III and IV) in their series have included horses, humans, birds, fish and safari animals.

But what about the man-made world? What about... thrills?

Cue Kevin Mahony, of The Animation Workshop, set to swoop into an unsuspecting Amiga world with a new concept - 3D animbrushes. And his first volume focuses on the formidable F15 fighter, which is one of the top guns in warfare.

The software is supplied on a single disk, and although there are only seven animbrushes to play with, you do get a fractal landscape, a few screen brush-objects, and the animbrush frames saves as full screens for your own manipulation.

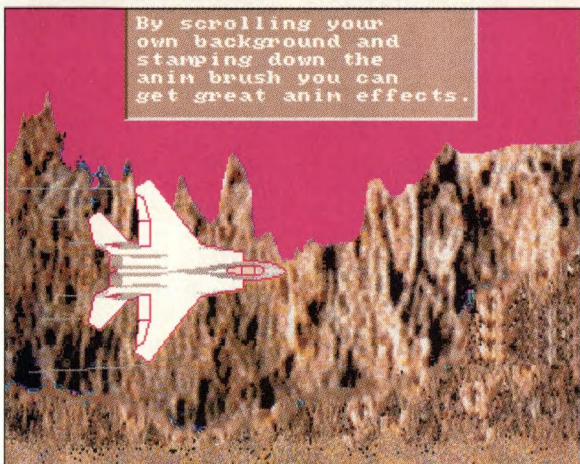
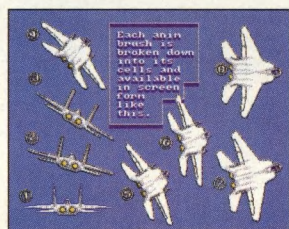
The animbrushes range from 11 to 40 frames in length, and were drawn in the 64-colour half-bright mode. This means the resolution is the basic, but the numbers of colours are maximised for your backgrounds.

In any event you can load in the anim brushes in medium resolution, then re-size them a frame at a time if you need a higher resolution output. While the animations are the trigger, in fact backgrounds are the heart of using animbrushes; it is the same as the RealThings world - you are given the building blocks, it is then up to you to unleash your imagination. The joy of

AH64 helicopter, Star Trek and Thunderbirds objects. The work involved is quite something, but as I said, if it saves other Amiga artists time then Kevin deserves to succeed.

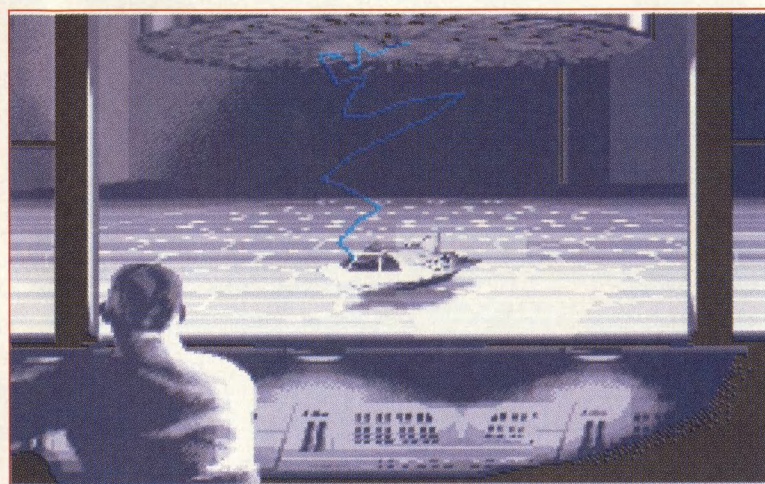
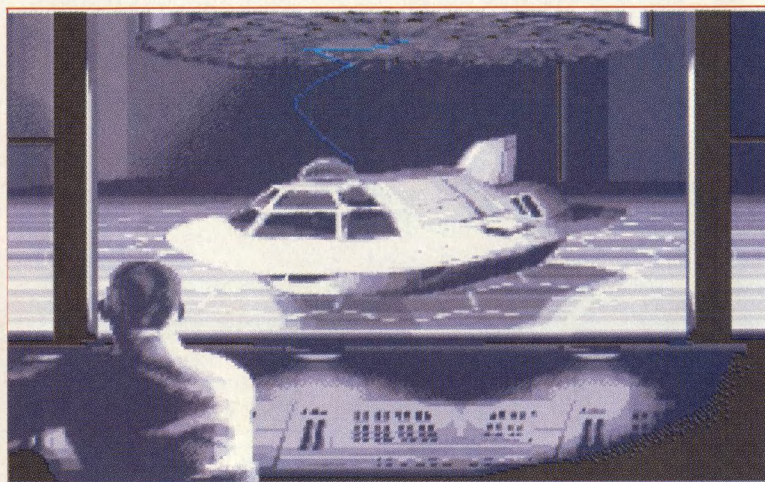
CONCLUSION

A great idea which will only be of use if you enjoy animating for its own sake. The animbrushes cover most aspects of the F15's flight, which isn't too much really. Be prepared to work on your own animation techniques and scenarios, because having an F15 rotating on a black screen is a particularly dull prospect. I would have liked more backgrounds, including some which can be scrolled horizontally, better documentation including a tips section (for a really competent user guide, see the Real Things paperwork as an example). But at an introductory price of under a tenner, it is a steal.



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FANTASY



If you're old enough to remember Raquel Welsh's now topical silicon augmentation, then the film on which this game is based should also stick out in your memory! The special effects were way ahead of their time, with an intrepid team of scientists being miniaturised (bar Raquel's cup size, of course) so as to be injected into someone's bloodstream to save their life.

The game puts you in charge of the submarine in the good guy, and the aim is to save him by destroying a clot in his brain. To do this, the action is basically a horizontal shoot 'em up, the tunnels of R-type, etc. being replaced by blood vessels. The gumph that accompanies the programme acknowledges that, in the normal course of events, things in your bloodstream don't shoot at you. They do here, however- artistic licence at its most medical! This is necessary, however, to make the game that much more difficult. It works, too, this is a hard nut to crack! It's just as well you get the regular chance to resume play from the section in which you bit the dust.

Enemies include antibodies, white cells, bacteria, and cancer cells (the gun-toting ones, these). There is also a race against time- oxygen and fuel supplies on board are limited. Refills lie scattered around, but with the forward planning normally associated with politicians, they always lie in areas of most baddie fire power. Such is everyday life in the body...

You are armed with fairly rapidly-firing guns, the power of which slowly improves the longer you stay alive. A shield is also in use- a nice touch is that three consecutive hits on a bad guy improves your shield status. Of course, whilst you're sitting still improving your shield level, the oxygen is ticking slowly down...

There are a few choices before the game itself gets underway: difficulty, high scores and the like. A welcome addition for this reviewer is a toggle for NTSC and PAL- well done Centaur! The only niggly downside is that, although the game comes on two disks it doesn't recognise a second drive. Prepare for a certain amount of disk swapping, therefore. Once you've started the game, there's a nice little introductory sequence involving the shrinking of the ship, and then a view of the scientist's body with your current position highlighted.

Once in the game, graphics are excellent- there is a strip of illumination only along the same horizontal line as your ship, so the rest of the blood vessel and its unwholesome occupants hide in darkness. The scenery and enemy have a suitably 'organic' look and feel to them, the latter appearing in a wide variety of shapes and sizes. The sound also sets the scene wonderfully, with constant dank drip-drip noises underlying a catchy music soundtrack. As mentioned, play is hard enough to keep any zapper happy- you need to fly by the seat of your pants as well as shoot everything that moves. For that matter, it's worth shooting things that

DECISION

Graphics: 80% **Sound: 75%**

The backgrounds are beautifully put together, and the various creatures suitably bizarre.

Difficulty: 7/10

One of those clever little tunes constantly plays in the background, with damp overtones to help set the scene.

V O Y

ASTIC



f1 start voyage
f2 beginner
f3 pal
f4 hi-score

Fantastic Voyage TM & © 1991
Twentieth Century Fox Film Corporation. All Rights Reserved.
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75%

Gameplay: 70%

Ideal for the horizontal shoot brigade, but perhaps in the end irritating to have to start from the beginning every time. The fact that there is an ultimate goal should keep you going, however.

A nice variation on the usual film spinoff, reusing the R-type style to good effect.



don't move too, just in case. Refills for the fuel and oxygen are sensibly placed along the route, which is not a maze but a series of differing tunnels which guide you to your destination.

It's a shame there's no save game or password entry to the higher levels, as to play, the beginning every time gets a little boring. In spite of the option to continue being usually available, you still get to know the early levels pretty well! This is, in fact, the key to the game - learn where the next gelatinous baddie will appear from, and you'll live to see another artery.

Gwynne Harper

AGE

Some things are worth waiting for ...

HiSoft Devpac 3

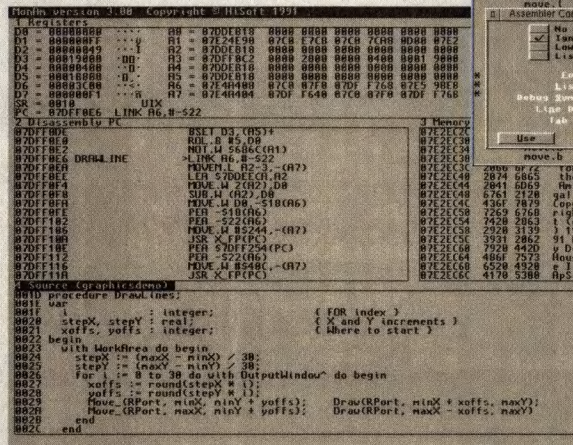
Devpac Version 3 is here at last. The two earlier versions of HiSoft Devpac for the Amiga set a standard in 68000 assembly language programming which was hard to surpass, but we think that we've done it. This new package has had a complete face-lift, from the editor through to the debugger; in fact so many features have been added and improved that we feel confident in the claim that Devpac 3 is the ultimate assembly language development system on the Amiga ... for now!

The Editor

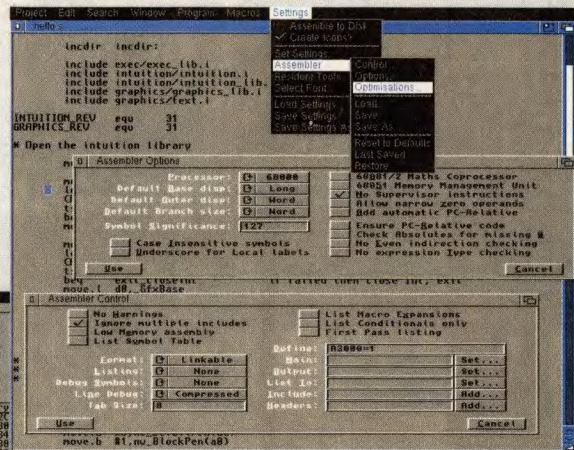
A new multi-window editor with bookmarks, mouse block-marking, macros, complete window flexibility (including multi-views on one file), extensive user configuration and full integration with the other Devpac programs. The editor makes use of Workbench 2 or 1.3 automatically.

The Assembler

Improved and extended, the Devpac 3 assembler is now at least 40% faster than its predecessor (without pre-assembly), supports the full 680x0 range of processors including the maths co-processors and has a tremendous number of switchable optimisations. With the ability to pre-assemble files for inclusion, it can now claim to be the fastest assembler on the Amiga.



the debugger supplied with both packages



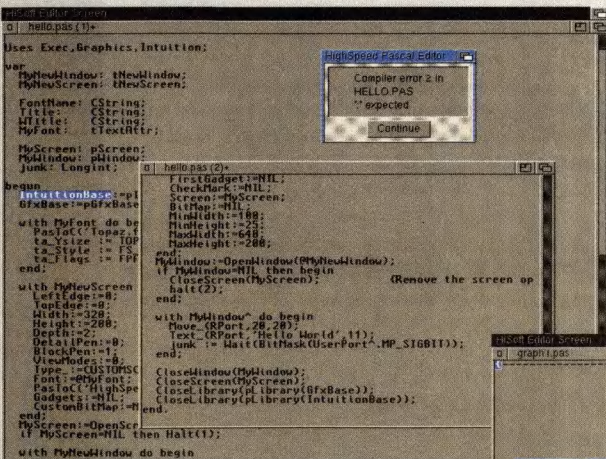
Devpac 3 gives complete control over the assembly process

The Debugger

Devpac 3 is provided with a versatile debugger/disassembler for bug hunting and ease of learning. You can have as many views on your program as you like, including its source code; then set breakpoints, single-step instructions etc. even at a source code level. Again, there is support for all the new processors and the floating point chips.

Devpac 3 comes complete with all the necessary include files, a linker, many examples and a clear, helpful manual.

HighSpeed Pascal



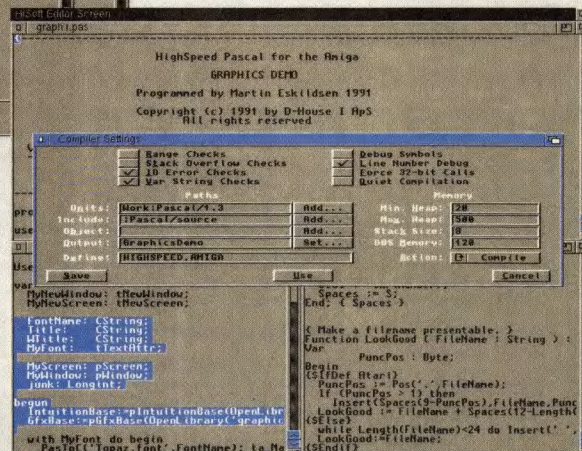
error detection is fully interactive

HiSoft Devpac 3 (£69.95) and HighSpeed Pascal (£99.95) should be in your local computer shop soon. If you have difficulty locating a copy, you can order directly from HiSoft using Access/Mastercard, Visa, UK debit card (Switch etc.) or a cheque/postal order. Mention this magazine when ordering to receive a free T-Shirt or mouse mat (offer subject to availability).

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The full Pascal language is supported including such worthy additions as structured constants, flexible string handling and absolute variables.



HighSpeed Pascal comes complete with all the necessary files for working with the Amiga's operating system, a host of examples and a professional, ring-bound manual.

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HiSoft
High Quality Software

HighSpeed Pascal is remarkably friendly and easy-to-use

It's 1999, society has become corrupt and violent. The public are demanding something more, something to satisfy their blood-thirsty needs. Stand back Jeremy Beadle.....it's time for Smash TV!

Smash TV is a game show in which you must play the contestant. You can win all sorts of things, cash, toasters (not video!), VCR's, and even flash cars!. But if you lose you go home in a bodybag instead of getting the usual cheque book and pen. Armed with a lethal lazer gun you must venture through rooms wasting club wielding cyber punks and other sorts of crazed mutants who are out to get your guts. At the same time you must collect prizes and bonuses in order to upgrade your weaponry, which ranges from normal lazer guns to massive rocket launchers. To make life even difficult, there are mines scattered all over the place.

Every five rooms there's a gigantic guardian just waiting for you to make its day. Looking like a juggernaut crossed with an alien from outer space, the guardian really takes some beating.

For those of you who don't know, Smash TV was also a mega hit in the arcade and can be played by two players. Even though the graphics on Amiga do not have the sharpness and detail of the coin- δ op the gameplay is just as good. The sarcastic comments from the host and the screams of the dying contestants make the game amusing. Overall Smash TV is a brilliant game as well as an excellent coin-op conversion. So lock away your sport sims and put aside your RPG's...it's time to crack a few heads together!

SMASH TV

Open the box, or take your pick, come back Hugh Green, all is forgiven!



DECISION

87%

Graphics: 80%

Lots of colourful sprites whizzing about the screen makes the game very lively.

Sound: 81%

Nice sound samples and effects do a lot for the game's overall presentation.

Gameplay: 85%

No nonsense straight forward blast'em up, you'll soon be hooked.

Difficulty: 8/10

Terminator 2 Judgement Day

Carried a nedy for We'll be back!



DECISION

45%

Best avoided.

Graphics: 60%

Some nice graphics and digitised images from the movie, shame about the game.

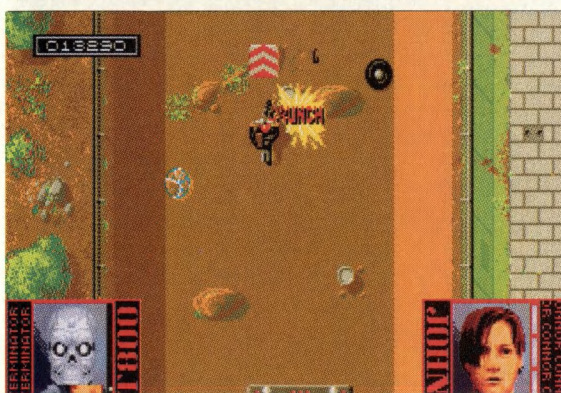
Sound: 40%

Same old sounds each level, gets a bit tedious.

Gameplay: 35%

What game play?!

Difficulty: 9/10



Terminator 2 was one of the biggest movie hits of last year, starring the Austrian mountain of muscle Arnold Schwarzenegger in an orgy of violence and bloodshed. The film grossed millions everywhere.

I trust that all of you have seen the film so I will not bore you with the story and get on with the game. You must take on the role of T800, the cyborg played by Arnie in the film. It's your job to protect John Conner who is being persued by the evil Terminator T1000.

In the first level you square off with T1000, you must fight him using your gun the only thing is your bullets are limited so after this you must resort to fisticuffs. Once dealt with, temporarily that is, you move to level 2. This level is set on a vertically scrolling sheet in which you take control of young John Conner who is on his bike being chased by T1000 in a juggernaut. You must dodge rocks, cars, water, and oil patches whilst collecting bonuses, making sure T1000 doesn't get too close.

The next level is a puzzle, there are two of these. Here you must repair T800 hand and as well as his face which is on a later level. This is done by sliding blocks into their correct places in order to regain lost energy. After a few more levels, roughly the same as the first few but with different backdrops, you come to the final showdown with T1000 which is set in the steelworks factory.

No way has Terminator 2, the game lived up to the standards of the film. Even though the graphics are colourful and the sprites are large and smooth, there is not an ounce of gameplay, and with the same levels incorporated with different back drops the game lacks variety.

Whilst playing the game you only get one life with no continue facility which affects the playability severely and after the first few goes you will be bored sick. For those of you who were thinking of buying Terminator 2, reconsider and rent out the video instead, it's much more exciting.

Sejid Hasesjee

As the last of the heroes was slain it signalled the death of Kalynthia. Bronakh's armies swept through the Empire like a rotting plague. Vo Marris, Sorcerah, Camcarvane even great Kal Kalon lay in blackened ruins until finally only the proud mountain city of Twilight remained. As Bronakh's hordes closed in the armies of Twilight charged one final glorious time like a flaming sword into the heart of darkness. But for now and all time there is only Bronakh.

ABANDON

Roleplaying games have always been a favourite of mine. Ever since I was given *The Hobbit* for my thirteenth birthday I have had my finger in the fantasy pie. For just as long, I have been playing computer games of all types - so it was natural that I would want to combine the two pastimes as often as possible.

Decent roleplaying games used to be a rarity. Until the advent of *Dungeon Master*, they failed to be an enormous commercial success and 16-bit computing had not really taken a great enough hold before DM for there to be any amazing releases, except perhaps for the early *Fairy Tale* and initial Lord British epics which were ported across.

Since Microsoft's famous *Dungeon Master* - the first 1 megabyte success on the Amiga - though, some great games have emerged. *Might and Magic II*, *Drakkhen*, *Knightmare*, *Eye of the Beholder*; all have passed through my Ami's Tolkien-mad innards.

As most fans of the genre will know, in the past there have been two major styles of 16-bit roleplaying games. These can (without offending any more contemporary imitators) be roughly divided into the *Dungeon Master* type of game and the *Ultima* type of game.

The latter is the more traditional explore-a-map roleplaying format, with symbolic representations of the party and any monsters met. This is obviously the less attractive type of game. DM featured the now-familiar first person viewpoint, with a display showing the view from the party's eyes. Monsters could be drawn in realistic ways, but the game lacked flexibility, confining most of the action to the underground dungeons.

So where does Electronic Zoo's latest offering fit into this scenario? Well, *Abandoned Places* goes a stage further than any other game to date, featuring both the map-type of exploration of the main world map and the DM-style underground sections for important locations. Every roleplayer's dream, or a nightmare only for those with a specialised skill?

Before answering that, I'll set you the scene of the game. Every decent world has to have a set of Gods. Usually, there's a main God who is the man who signs the important documents, saves races from floods and so on. Then there are lesser, or Demi, Gods, who handle all of the more mundane work like heavenly filing and the more minor rescue jobs. Of course, there's always a rotten apple in every barrel and heaven is no exception.

The rotten apple in Electronic Zoo's roleplaying barrel is a Demi God called Bronakh. He's determined to do away with the real God and replace him, thus throwing the land of Kalynthia into total disarray and chaos. Being of the eminently sensible persuasion, you've decided to a) get rid of the Demi God and b) get someone else to do it for you. Of course,



untold riches, fame and the undying gratitude of an entire land await the heroes who succeed in completing so dangerous a task.

Putting together a team of hardy adventurers is no problem. In fact, *Abandoned Places'* Hungarian programmers, Artgame, have made it extremely easy for you to decide which format the party will take. You're restricted to two warriors, one priest and one wizard. This is always the most sensible combination and it's the one most often chosen, so no points deducted for lack of flexibility (though I would have liked to rename my heroes).

Play starts in the map section, although you could dive straight into the first castle as it's right nearby. This might be a good idea, as the team was short on funds and started with no equipment to speak of. Going into the castle will also give you the very important practice of combat skills you'll need so badly later on in the game.



Graphics in both sections are well above average for roleplaying games. In fact, I'd go so far as to say that the underground scenes are excellent; colourfully drawn and very convincing. Eerie sound effects follow you about adding to the atmosphere. The screen is well-designed, although it's rather cluttered and the main display is a touch small.

The puzzles are just as devious and nasty as any other roleplaying games make them. Of course, they start easy. Once you've cracked the first castle, remember, you've got to go out into the wilderness and find the next dungeon area, bearing in mind that, by then, you may well have been assigned a quest to complete...

There's very little I can say in criticism of Abandoned Places. Everything about it smacks of polish and professionalism, which is a credit to Electronic Zoo and Artgame for overcoming the language barrier - and an 800+ mile development distance. If pressed, I'd have to question the



DECISION 92%

An extremely well-presented, varied and addictive roleplaying banquet.

Graphics: 90% **Gameplay: 94%**

Very detailed and precise, with A dream for fans of both game good animation in the underground types. Great stuff. sections.

Sound: 80% **Difficulty: 9/10**

Nice tunes and some eerie effects add atmosphere.

A toughie. One to get your teeth into.

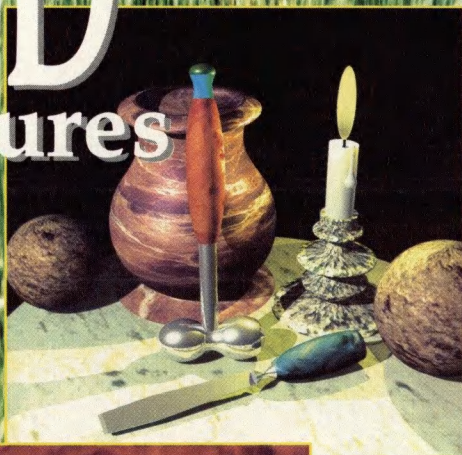
choice of combining two totally different roleplaying styles in one package. Exploring fanatics won't appreciate the arcade sections and DM fans won't be easily persuaded to let the adrenaline slow down for the map sections. Fans of both game types, like myself, could hardly dare to ask for anything more - except, perhaps, a sequel...

Ashley Cotter-Cairns

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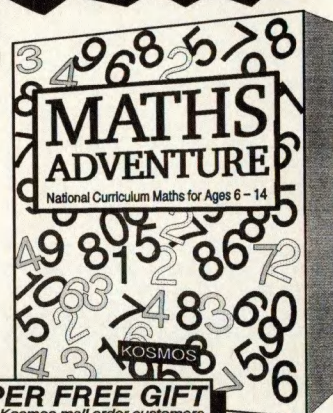
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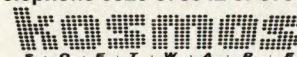
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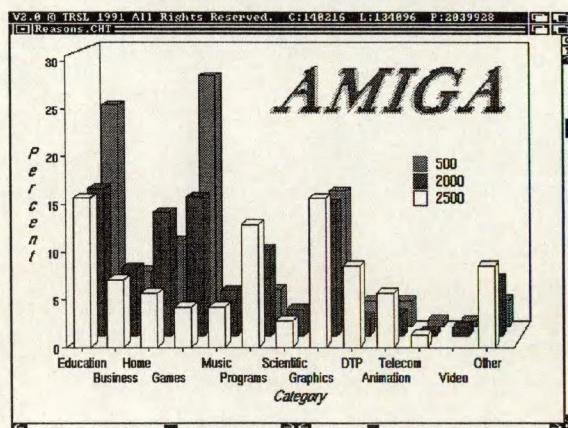
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Wrestlemania

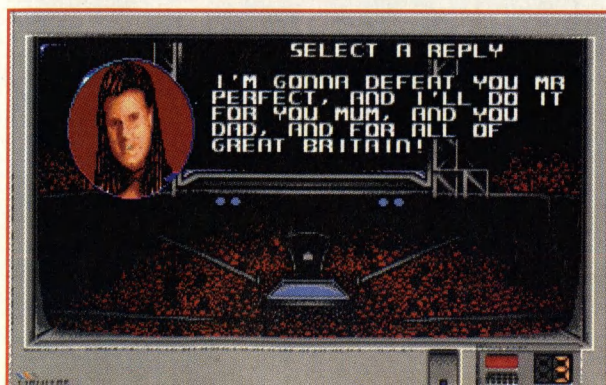
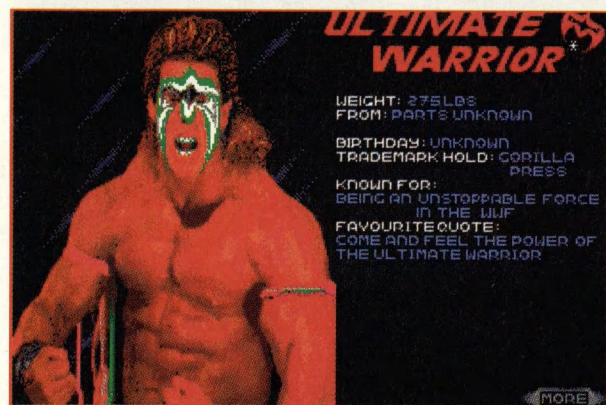
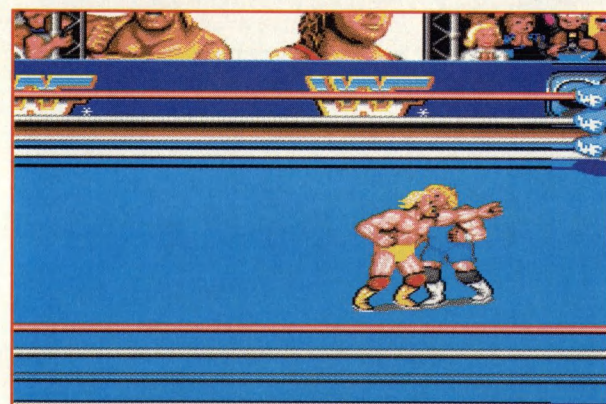
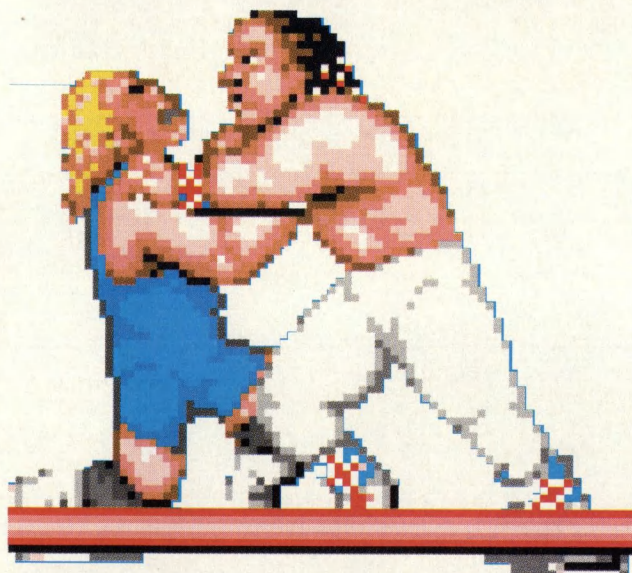
Right from the very first screen when searchlights play across the auditorium and the title music blares through the speakers I knew that this was going to be a game I would enjoy playing and if you like all-in, no holds barred, finger licking good American wrestling as much as I do then this game is for you as well.

The game allows you to do everything that you would see or do in a wrestling match, from climbing on top of a post to ducking through the ropes onto the floor and beating your opponents brains in with a convenient chair. But beware, your opponent can use it to give you a hefty whack round the ear as well.

The first option screen presents you with a menu which asks if you would like to practice or compete for the Wrestlemania belt. If you choose the practice mode then you get the chance to fight with a second player, this is the only time you can do this. If you decide to compete for the belt, then your next choice is who you want to be. Hulk Hogan, Ultimate Warrior or the British Bulldog.

Each challenger is well drawn and they pop on to the screen one-by-one, each giving details of their weight, best known saying etc. At the start of each game you are given four credits, every time you lose a match an option screen appears asking if you would like to play your last game again, this is a good idea as it gives you the chance to get your revenge rather than to go back to the beginning especially when you are already at a high level.

Before the start of a bout, the opponent wrestler will say what he thinks of you and you can reply in return from a posse of three well known speeches. Your opposition then lets you know what he thinks of



you too. This really takes too long when all you want to do is wrestle and to speed it up press the fire button, but then you may as well go off for a cup of tea as the ring takes a lifetime to load.

To win the Wrestlemania belt you need to beat five of the toughest and meanest wrestlers in W.W.F. They are Mr Perfect, The Warlord, Million Dollar man, The Mountie or Sergeant Slaughter, each one having their own special move such as a Full Nelson or the Drop Headlock.

When in the ring, all the usual holds and throws are open to you as well as Drop Kicks and climbing on to the posts to perform flying Drop Kicks. However I do have a gripe here as when the computer initiates a move there's nothing you can do to get out of it for several seconds, "Hey Ref - you blind or something!"

The package comes complete with a video lasting approximately fifteen minutes showing a real life wrestling bout, this is a great idea because even if you hate the game the video is very watchable. However, if wrestling is new to you, you probably wouldn't buy the game in the first place. A nice touch though.

All in all, I found the game a gripping experience.

Alex Baldock

DECISION

78%

The reality of the game sure makes it the best wrestling game I've played yet

Graphics: 80%

The wrestlers are a bit flat, but the auditorium is great!

Sound: 70%

OK for a few grunts and groans here and there, but your granny might object.

Gameplay: 85%

Easy to play once the controls have been mastered but be prepared to wear out your drinking arm.

Difficulty: 5/10



DOGBOR

DECISION

90%

Fun to play for all the family

Graphics: 95%

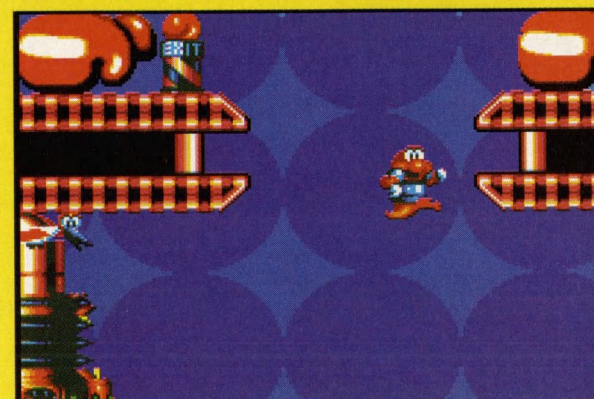
Bright, clear colours with nice touches of detail

Sound: 80%

The effects were good but the music should have been strangled at birth

Gameplay: 90%

Really simple to grasp once you have the grasp of your joystick

Difficulty: 4/10

It is December 23rd. You are F.I.5.H. special agent James Pond, codename Robocod. Your mission is to defuse the villainous Dr. Maybe's lethal explosive toy penguins, which have been planted in Santa's Toy Factory inside the North Pole, before Christmas Day when they will be dispatched all over the world.

There are penguins in all eight levels of the factory, guarded fiercely by a variety of Meanies (Dr. Maybe's guards) including half baked Cherry Pies, Mutant Caterpillars and even evil Bertie Bassett!

The only item of equipment you have in your possession is an Expandosuit which enables you to "mash" the Meanies by jumping on top of them, and to stretch yourself upwards to cling onto the roof, if need be, whilst crossing hazardous terrain or catching toys.

Each level is set in a different part of the factory. There are sports rooms, chess rooms, music rooms and bathtubs to name but a few. Hidden treasures abound, waiting to be collected. Power stars give you extra batteries for your Expandosuit (necessary for survival!), Golden Ankhs for extra lives and a variety of flying equipment ranging from angel wings to umbrellas to enable you to take off!

The Briefing Dossier included in the package gives you an idea of the different obstacles to be encountered on each level, except the last one which they leave you to discover for yourself. (So I won't spoil the surprise!)

Robocod is easily controllable by means of a joystick as the number of functions is limited and therefore simple to remember instead of having to consult the manual every time you want to move! The graphics are excellent; clear and not over-the-top. They have a humorous element to them as Robocod can slide down slopes and the moving bridges bend under his weight as he walks along them. The music however is a different kettle of fish. It is tolerable for the first five minutes, but after that it began to get on my nerves. Is there no way of turning it off without losing the other excellent sound effects? The sound effects make the program come alive with an "Ouch" every time a Meanie treads on poor Robocod's tail and a "Thump" when he falls to the ground; (This also makes the screen shake. A nice touch.)

I do like the option available at the end of each game of being able to begin another attempt at the level at which I finished previously. This saves a great deal of boredom as you don't have to fight your way up all the lower levels again. You just begin where you left off.

I must admit that first impressions of the illustrations on the box, made me think the game would be too childish but this is not the case. I thought Robocod was most impressive, easy to learn and provided me with hours of entertainment. In fact, you could say it's got me "hooked"!

Alex Baldock

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Short Reports

Sheffield based company GHB have launched a new wave of budget games onto the Amiga market. Priced at a non-toxicating £7.99 each, David Bell plugs in his joystick for a furious games session.

Thunderstrike

This is a future sports simulation in which you compete against a host of pilots from around the galaxy in MegaCorp Industries annual Ground Defence Games. It's your role to defend a number of ground installations whilst trying your best to wipe out those of the opposition. If this is done successfully you progress to the next round via an evaluation screen. Here you are given marks for defence, hit rate and TV ratings! Yes it's that old favourite the TV sports game. Cue attractive presenter (not Des Lynham), stirring theme tune (the one from Rollerball as it happens). The game is polygon-based and features quite a fast update and a friendly control system. The only drawback is the way that the action is actually depicted. You see your craft via a trailing camera which, whilst all right when travelling in a straight line, makes turning and shooting a rather difficult matter. This is a game that might keep you playing for a while, but ultimately I think the frustration level is just a bit too high.

Rating: 65%

Thunderstrike - Live on TV!



Resolution 101

In this game you play a criminal (no change there) who has the opportunity to be granted a pardon under Resolution 101. All you have to do to reach this happy state of affairs is blow away a few scummy drugrunner types. Okay, so it's not that easy but boy, is it fun! Equipped with

only the basic model Theta 4000 ground skimmer, the Fiat 126 of its time, you're going to have your work cut out. Fortunately there's a whole host of add-ons available including some rather nice missiles. Resolution 101 is another polygon based game. The speed is blistering and the controls are responsive. I have a few reservations about the hard-to-read control panel, but otherwise this is a brilliant game, and one that I would not hesitate to recommend.

Rating: 87%

Resolution 101 - Recommended!

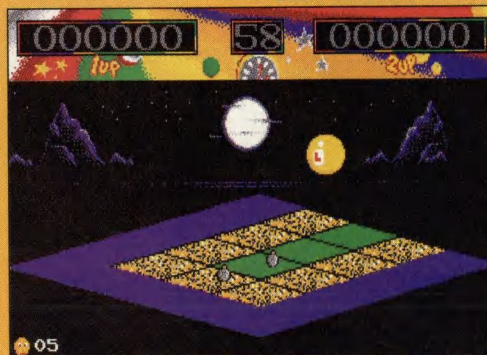


Manix

You are fat Filbert, a yellow, (and rather cute) ball whose main aim in life is changing tiles back to their original colour by bouncing on them. The reason he has to change them is that at the start of each screen several bombs fall and scramble the landscape of his isometric home. During the course of the game, which is played against the clock, various objects fall from the sky to either help or hinder Filbert's progress. These include coke cans that can be fired at the baddies, extra time and more of those nasty bombs. Sloping tiles and water add to the mayhem. The main factors in this game are cuteness and fun. A good difficulty curve and a liberal sprinkling of addiction will keep you playing this one for quite some time.

Rating: 85%

Manix - Get a move on Filbert!



Ultimate Golf

GBH Gold, £9.99

It says in the manual that this game took eight man-years to write. After playing it I can't help but wonder if they spent rather too much time at the 19th hole. The graphics are poor, the sound is virtually non-existent, and the gameplay dull. If you want a fun golf game buy PGA Golf Tour. If you want a technical golf game buy Microprose Golf. If you want to waste your money buy Ultimate Golf.

Rating: 35%

Ultimate Golf - Not so hot.



Mindbenders

This is a game that is true to the old adage, "It's all done with mirrors". Your aim is to use the energy given out by the wizard McDuffin (or is it MC Duffin?) to blast your way through an ever more complex series of screens. Don't, however get the idea that this is a shoot-em-up. No, Mindbenders is puzzle-gaming at its best. By using the mouse to control any number of gnomes (one screen is jam-packed with the little blighters) you tilt their mirrors to reflect the wizard's energy beam to destroy cauldrons, light lightbulbs and open the door to the next level. The game is challenging (there are times when you feel like throwing your Amiga out of the window), but above all this is fun!

Rating: 90%

Mindbenders - Best of the bunch.





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THAT A SONG?). ALL THE
NEWS AND VIEWS RIGHT
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ONLY TALK
ABOUT.

The door has opened once again to *AUT*'s world of adventure, a world that will transport you from the deep dungeons of Mindscape's 'Knightmare', across light years of space with Gremlin's 'Suspicious Cargo' to meet up with the Empire's Space 1889' over 100 years back in time. Let us also not forget the final part of my Monkey Island solution, a quick look at the plot for 'Monkey II', and a few clips from Delphine's newie 'Another World'.

But first the news.....

ADVENTURE NEWS

ANOTHER FIRST FOR MICROPROSE

Those great strategy specialists Microprose are releasing 'DARKLANDS' their first ever real fantasy role playing game. Set in 15th Century medieval Ger-

many, an era where there were no less than three Popes in office at the same time, powerless Emperors, gangster noblemen (which makes a nonsense of their name) witches, devil worshippers, alchemists, dragons and saints. Enough material there for rpg heaven! You get to explore a vast map of Germany with your party with the aim of achieving immortality by completing simultaneous multiple quests. These are created by an 'adventure generator' providing endless numbers of missions. Should see the light of day on Amiga late Summer.

ACCOLADE SNAP UP LEGEND

Legend Software, the company set up by ex Infocom man Steve Meretzky, and responsible for TIMEQUEST and SPELLCASTING 101 (both incidentally to come out imminently on Amiga) have signed up with Accolade for all their forthcoming product. The next release will be



unsurprisingly SPELLCASTING 201: THE SORCERERS APPLIANCE, which once again features the quirky student wizard Ernie Eaglebeak, the Larry Laffer of the magic world in a kind of Animal House spoof. After his antics in 101 as a freshman on Sorcerer campus, Ernie this time around endeavours to join a Fraternity House and comes up against Hell Week, the worst time of the University diary. Bags of humour, and cunning puzzles which are Meretzky's trademark (remember Hitchhiker and Planetfall) all wrapped up in Legend's acclaimed new push button interface, superb animation and stereo sound. The game also features a 'naughty or nice' mode which in itself is bound to sell a few more copies because players will want to see just how naughty 'naughty mode' is!

MONKEY ISLAND II Update

LeChuck's REVENGE, the title of the follow up, is just about ready to hit the streets, and this seems like a good opportunity to reveal the new plot. Since Guybrush Threepwood defeated the ghost pirate LeChuck and rescued his true love, time has passed and his fame is starting to fade. Folks are tiring of his well told tale of how he ghostbusted LeChuck, and so Guybrush, looking for something new finds himself on Scabb Island searching for the greatest treasure of them all, The Big Whoop!

Unfortunately, Largo, a relative of the deceased Pirate has slapped an embargo on the island to stop people coming and going. Guybrush has to make a voodoo doll of Largo to get rid of him, but one of the ingredients just happens to be the living beard of LeChuck which falls into the hands of his henchmen, and gives them the vital ingredient to resurrect him!! Only by finding the Big Whoop will Guybrush have the power to defeat LeChuck again.

The guide map to the treasure is hidden in four parts on two other islands and the quest involves a great deal of travel between all three before the secret of the treasures location is discovered. As before there are plenty of sub plots, and a few of the popular characters are back like my favourite Stan the salesman. As well as old friends, there are some intriguing puzzles, a grog drinking contest, a spitting contest, a spin the wheel game and a bellyfull of laughs. I can't wait to get a finished copy.

MONKEY ISLAND SOLUTION Conclusion

We left Guybrush about to board the pirate ship wearing the necklace of invisibility..... Once aboard go to the hatch and get the feather from the chickens, use it on the sleeping ghost's feet to get his grog. Go back on deck, walk left into LeChuck's room. Go as near as you can to the key on the wall then use the magnetic compass to get it. Go back down below to the livestock and unlock the hatch.

Go down and put the grog in the rat's dish, collect some grease and smear it on the squeaky door above. Open the door and collect the tools, go back to the animals and use tools on the glowing crate

which contains the voodoo antiroot needed by the cannibals.

Leave the ship, and speak to the ghost guard to find out where the ship has now sailed to. When Toothrot arrives, force them both to take you with them. Back at Melee Island kill any ghosts you meet by using the root beer and go directly to the church. Stop the wedding (LeChuck is marrying the Governor.... the lady you love) and advance on the Pirate. He will chuck you across the island to Stan's shipyard and into the grog machine. Once out of there, grab the root beer and throw it at LeChuck and sit back and watch the fire-work display!!

Sit right through the end sequence and credits because there is an interesting tit bit at the end. Well done!

ADVENTURE REVIEWS

SUSPICIOUS CARGO

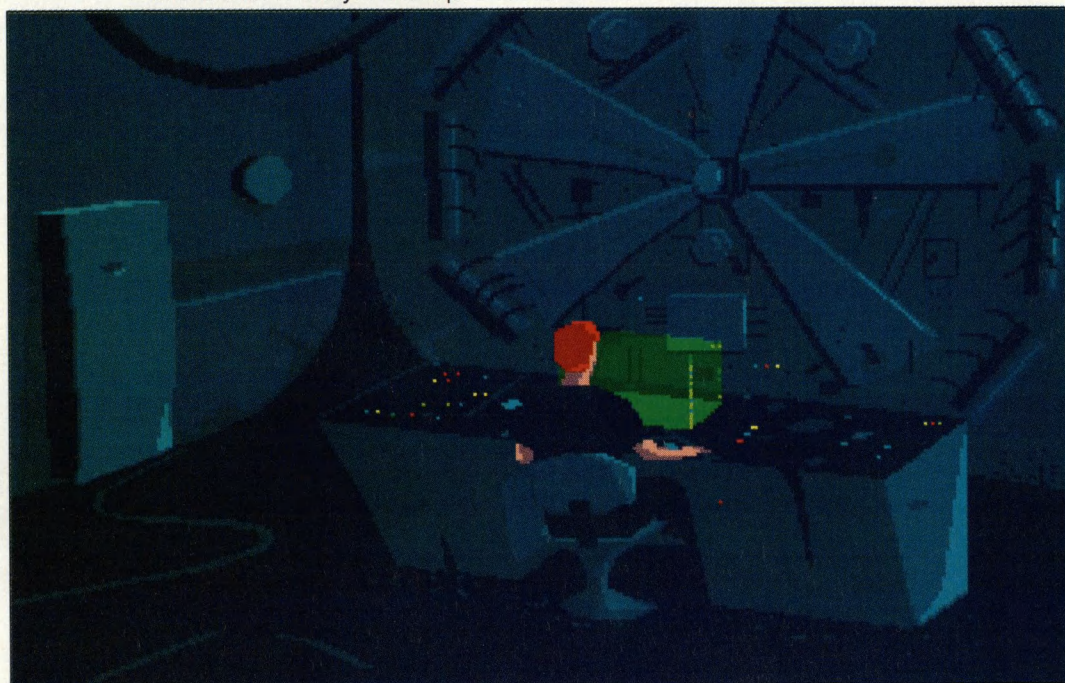
GREMLIN GRAPHICS £25.99

I feel somewhat deflated. This release was billed as a throwback to the traditional text adventures, but with a difference. The difference is in reality a hotch potch of differ-

transporting a very dodgy piece of cargo across the galaxy in his rustbucket of a ship, the Lady Luck. The cargo turns out to be a mutant made by genetic engineering that has been stolen from a Zoo, and therefore has no quarantine approval. It just happens to escape from its container in your hold and so not only do you have the problem of keeping your ship functional throughout the flight, but you have the alien running about everywhere.

The aim of the adventure is to get your own back on your blackmailers by compiling the right evidence against them whilst trying to save your own skin.

The game system allows you either to type in your commands from keyboard or use a delightfully helpful mouse driven icon interface. This interface at first seems somewhat complicated but when you have the hang of it, it sure beats typing. The parser is fairly sophisticated, as you would expect these days, and thankfully there is a RAMSAVE option which I would recommend you use at all times. Why? Because this is one of THOSE adventures. You know the type, the ones that kill you off within three moves unless you crack the puzzle.



Another World.

ent game styles all thrown together. By that I mean that the core of the game is indeed a text adventure, but wrapped up in a blanket of slightly animated picture scenes, arcade sequences (which are frankly pretty poor and seemingly only in there to appeal to the arcade playing market) and a few logic puzzles, which admittedly are bypassable.

That said, there is a strong rpg element throughout, a good storyline and more than a little humour thrown in for good measure. But my point is, it is nothing ground breaking and I can only think that a buyer who is expecting something totally new will be ultimately disappointed.

You play the part of freelance space pilot Jonah Hayes who is blackmailed into

I must be fair here, not all the puzzles are like this but there is one right at the start, and a nasty one involving your oxygen supply, thus be warned.

So, forget the arcade sequences, and all the dressing, and there is an enjoyable text adventure in there but nothing startlingly new I'm afraid.

STORY	80%
GRAPHICS	70%
OVERALL	60%

KNIGHTMARE Mindscape £29.99

This release is based on the children's TV series of the same name, and is in reality a 'CAPTIVE' clone and bears no resem-

blance to the TV series apart from its rpg dungeon elements.

CAPTIVE was, of course, penned by Tony Crowther, who it will come as no surprise learn, has also written this one. Which is good news because CAPTIVE certainly hit the spot for me in these pages and KNIGHTMARE is no bad sequel. The action is depicted in bitmapped first person 3D as is the case with many of the current rpg front runners like EYE OF THE BEHOLDER, DUNGEON MASTER et al, and clearly all the recognised movements



and actions used by each are available here too. Your inventory is clearly shown on the right of the screen, as are your party's hit point status, whilst the left side is where all the animated action takes place.

After creating your party, you choose a quest, one of four available, and each has to be completed in order for you to progress ultimately to confront Lord Fear and his horrible sidekick the Frightknight. The prize? The Crown Of Glory. Along the way you will encounter a vast array of n'er do wells to block your progress, and, of course, there are many items to collect that will aid you.

It is all good meaty fun, and stands well alongside other leading lights of the genre, but I fear that anyone who buys it (particularly younger kids) thinking that they are getting the TV show on their computer will be somewhat disappointed.

GRAPHICS 87%
PLOT 70%
OVERALL 80%

SPACE 1889 EMPIRE £29.99

Have you ever wondered how scientists in the 1800's pictured our solar system? When you stop to consider the genius and imagination of Jules Verne, H.G. Wells and Arthur Conan Doyle, they really were not too far away from reality were they?

A true role player will grab at the chance to change places with historical figures and see whether he or she could overcome the trials of life in those times, using just the equipment and technology available then. That is true role playing, and in SPACE 1889 you have a perfect vehicle to experience solving puzzles without computers, matter transmitters, and other teccie objects. A challenge, yes indeed, and one that the Games Workshop ably put together with their rpg board game of the same name.

How has the computer version stood up to the conversion?

I have a strong feeling that unless you are a fan of the MEGATRAVELLER series, SPACE 1889 will leave you cold. It is an rpg that is packed with things to do and places to visit, both on Earth and in Space, but the gameplay is very complicated and detailed and only aimed at the experienced player. If that doesn't put you off, let's have a look at the game scenario.

You start by creating five characters from around six attributes and 24 skills, and begin the adventure at a reception in the London Museum where an exhibit showing Egyptian artifacts is about to be presented. Remember this was the time when the Tomb of Tutenkhamen had still to be discovered. You overhear a conversation between two men who are discussing the financing of an expedition to the Valley Of The Kings (where King Tut is buried).

The Germans have a report of its location and you realise that all Tut's treasure is there for the taking. You convince the rest of your party to travel to Egypt and embark on a treasure hunt. But first you have to get a copy of that report.

Your adventure begins here, and takes you across the world initially and then onto outer space, to the caverns of the Moon, the swamps of Venus and the deserts of Mars.



All action takes place in an overhead viewpoint on a scrolling map system, just like the Megatraveller presentation, with graphic quality second really to information, and character interaction. Because of the sheer wealth of locations, actions, conversations and melees, there is simply not enough memory left for award winning animation. Remember, I said this one is for experienced rpg'ers only so no pretty pictures, just a game that is about 50 feet deep.

GRAPHICS 50%
PLOT 85%
OVERALL 80%



Just a glimpse here of Delphine's new adventure after Cruise For A Corpse. As you can see it is a complete departure from what they have done before, using polygon graphics to an impressive standard. The word is that it should be out around Summer time, but which year, I hear you ask?



ONCE AGAIN SPACE
HAS GOT THE BETTER OF
ME, BUT CHECK US OUT NEXT
MONTH, WHEN I LOOK AT HEART
OF CHINA, CELTIC LEGENDS
AND REALMS.



TEST DRIVE

'The Heavyweight Champion of Amiga DTP' an earlier version was called Jonathon Living examines the latest upgrade.

PAGESTREAM 2.2

It seems everything on our screens is turning 3D these days, including version 2.2 of Softlogik's "PageStream" desk-top publisher. But before you don a pair of cardboard specs with coloured celluloid lenses, I should warn you that PageStream doesn't appear in "3D Freddy Vision" like "Nightmare On Elm Street 6", it has just taken on the solid grey, business-like 3D look of Workbench 2.0.

Another main addition to PageStream is "Hotlinks" - Softlogik's solution to inter-program communications which provides real-

"PageStream's strength remains its sheer complexity, although this shouldn't imply it is difficult to use."

time data transfer between PageStream and soon-to-be-released "PageLiner" and "BME".

It works like this: PageLiner (which is described as a miniature word-processor), BME (presumably standing for Bit Map Editor) and PageStream all have options to "publish" and "subscribe" to text, graphics or a mixture of the two, respectively. If a block of text is prepared using PageLiner and "published", then Hotlinks will perform the housekeeping for the file which is created. If the text is then subscribed to by a user of PageStream who wishes to use the text in his

or her document, a physical link will exist between the two programs which share the text.

Put simply, this means that changes made to the text within PageLiner will immediately affect the document using the text in PageStream, provided the Hotlinks "update" option is used. If PageStream had not been running with the appropriate document when "update" was chosen, Hotlinks will ensure that the most recent copy of the text will be used the next time the document is accessed. Of course, Hotlinks works both ways, and

PageStream v2.2 UK

PageStream 1.1 art

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TEST DRIVE Thinker V2.1

Hypermedia. The computer application of the future, is within your grasp. With Thinker V2.1, Jonathon Living Investigates...

...report must find its use of the most powerful hardware sources the main complexity of the moment, and if there's one machine that tends to have been declared 'readily' for a system that the pages must surely be it. Search facilities, a windowing environment and connections with multimedia through Commodore's own CDTV are all evidence of this.

Thinker V2.1 from Pool Party Software is a budget-priced, powerful desktop tool to enable the user to construct interactive documents. In this application, graphics and text appear in a frame and scrollable way. Displayed on a single disk (which contains the program and several example documents), Thinker will run even happily on a single 286 machine.

And as you drive the machine, the other volume to be pulled in is about a security if disk to a particular robot displayed or moved to eventually to the screen.

COMPUTER NEWS

AUI TOPS THE BEST SELLERS CHART

New York Times Best Seller Gold is New Year

A simple Newspaper layout.

70 **AUI** APRIL 1992

alterations to the text within PageStream can be made to affect PageLiner's copy, and so on. Graphics too are supported in this way.

PageStream's strength remains its sheer complexity, although this shouldn't imply it is difficult to use - the Workbench 2.0-style interface is wonderfully intuitive. Rather, it is the number of facilities available, for everything from importing text and graphics, to drawing structured objects, page layout and printing, which makes PageStream one of the best publishing packages around. The review of version 2.1 appeared nearly 12 months ago, so it's probably worthwhile looking again at the main points in its favour.

Unlike other publishers on the Amiga, PageStream can import text and graphics without first needing boxes for the data to go in; PageStream gives the general name "objects" to things imported in this way. Text columns can still be created automatically at any time, if required, although these are used almost exclusively for the main copy in a document, and support text linking, style tags and all the main word-processing facilities PageStream has to offer (a spelling checker and a search and replace feature are amongst the most useful).

However, it is objects which can be slanted, twisted and rotated in one degree increments, re-sized and grouped together (to allow easy layout changes). Remember that objects can also be structured graphics as well as text or bitmaps, and to be able to produce a single, movable object from a mixture of all 3 sources (and then to be able to separate them at a later date) is something unique to PageStream.

Structured drawing tools are supported with box, polygon, circle, ellipse, line, bezier curve and freehand tools - certainly enough to make the purchase of a separate structured drawing package seem unnecessary. It is possible to alter graphics after they have been drawn by using the "reshaping" tool, and a variety of line styles and thicknesses, fill styles and colours can be used. And, if you feel limited by the 7 predefined line styles and 39 fill patterns, you can always design your own.

As ever, the number of fonts supplied with PageStream is phenomenal - 3 Compugraphic types (which include "Garamond" in addition to the more usual "Triumvirate" and "Times") and 8 Softlogik outline fonts, based on more adventurous designs. Styles too, are well supported - 12 in total are available, from bold and italic to strike-through and double-underline.

Here in Amiga-dom, we ought to consider ourselves very lucky. Since the Amiga's inception back in '85, the number of file formats for graphics in particular hasn't increased dramatically. Yet PageStream supports not only the widely used IFF ILBM format, but also several other "popular" formats from other machines - TIFF, GIF, PCX and IMG being a few examples. If these names mean little or nothing to you, rest assured that they are the most popular Atari, IBM and Macintosh formats, and will enable you to "steal" artwork from practically any source, provided you have appropriate

file transfer software such as Mac-2-dos or Dos-2-Dos. Structured drawings can be imported from Aegis Draw, Professional Draw and additionally in EPS (Encapsulated PostScript) and Adobe Illustrator formats from other machines.

PageStream is also one of the few programs to use custom printer drivers. Included on the program disk is a huge selection of drivers for every printer you're likely to have heard of, and some you're not! The drivers bypass the usual "prt:" device configured through "preferences", and write directly to a serial or parallel printer connected to the Amiga.

Output quality, particularly on the half-tone representation of bitmapped graphics, is nothing short of superb. I own a Deskjet 500 at the moment, and PageStream provides the best output from it that I have ever seen. If you are aware of the new colour version of the Deskjet (the 500C) you will know it provides near colour-laser quality output at a fraction of the cost. PageStream, now sporting a 500C driver, will be one of the few programs capable of outputting to this dream machine.

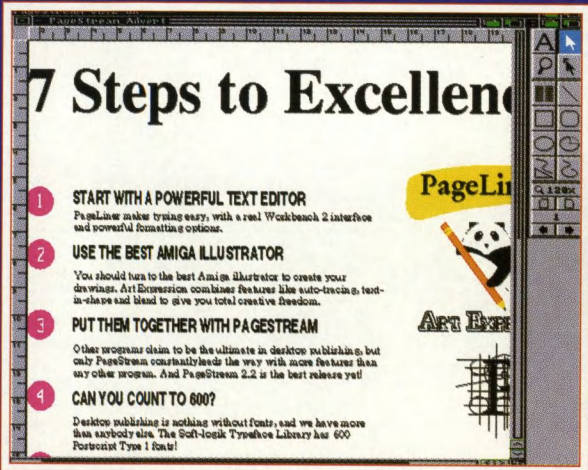
Softlogik intends to support release 2.2 with no fewer than 21 disks of structured clip-art, licensed from ImageClub. PageStream's new Adobe Illustrator EPS import module allows the clip-art to be loaded in and output to any printer, PostScript or otherwise. Some examples of the clip art were included with the review copy of PageStream, and I can certainly vouch for the quality of these highly detailed samples. The US introductory price for a single volume is \$99.

Already available from Softlogik, in the US at least, are "Business Forms" and various font packs. Business Forms, which sells for \$39.95, is a set of 40 of the most commonly used paperwork layouts, while "Plus Pack" and "Font Pack 1", which both retail at \$75, are additional outline fonts. The Plus Pack contains 11 Compugraphic fonts, including Avant Garde, Zapf Chancery and Century Schoolbook, whereas Font Pack 1 contains 14 Softlogik fonts, including unusual faces like "Keyboard", "Elegance" and "WestSide". I have seen one UK software supplier advertising both of these font packs at very reasonable prices.

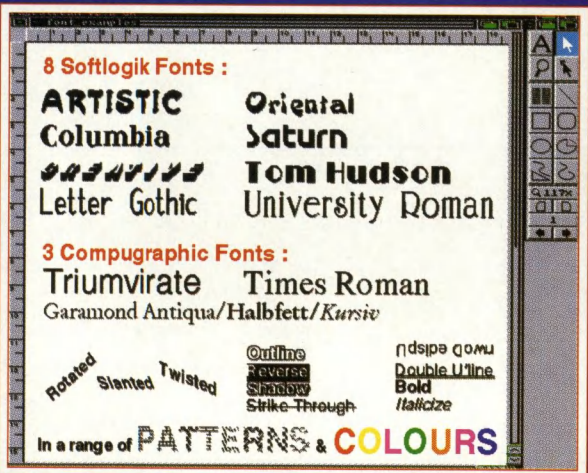
Having run PageStream V2.2 and Professional Page 2.0 side by side on my 3MB/A590/A500 system, I can quite honestly say that in nearly every aspect, PageStream 2.2 outperforms ProPage 2.0. It remains to be seen whether release 2.1 of ProPage runs significantly faster than previous versions, as suggested by AUT's Update File in February's issue. This may just give ProPage the edge in terms of outright usability, at least on the 1MB, twin-drive systems each program requires as a minimum. In the meantime, the introduction of Hotlinks (and a suite of compatible auxiliary programs), clip-art and font packs all serve as evidence of Softlogik's continued commitment to the success and furtherance of PageStream. If all of this is considered on top of what was already an extremely competent program, PageStream deserves to become an institution through being the very best Amiga desk-top publisher.



"Computer News" magnified. The picture of the girl is a HAM graphics file which has been imported into PageStream.



A recreation of the advert for Pagestream V2.2, showing just how easy it is to produce professional results.



Examples of the fonts, styles and patterns available at standard.



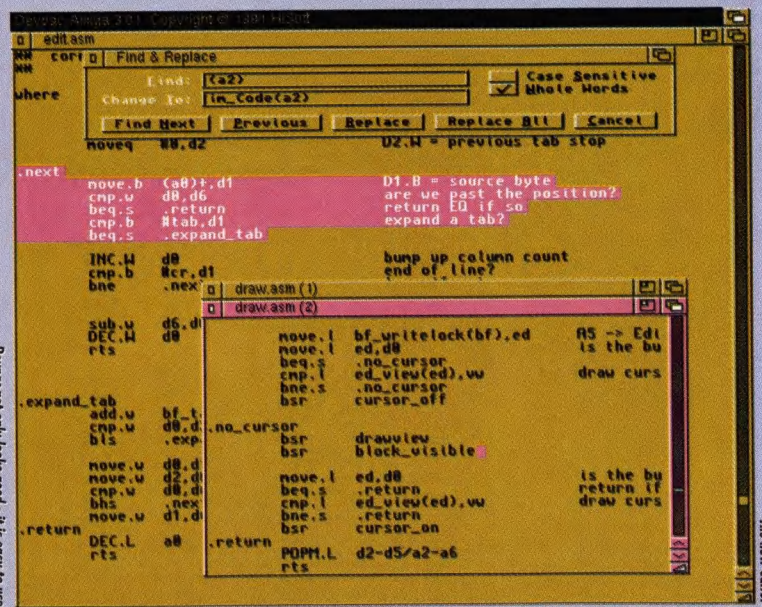
Examples of Softlogik's clip-art collection.

Price: £199.99
Contact: HB Marketing, Unit, Poyle 14, Newlands Drive, Colbrook, Slough - Tel: 0753 686000

The Devpac 3 manual follows a similar style to earlier offerings although it has grown in size. The documentation, as

Perhaps the biggest news about the new Devpac 3 environment is that whilst

All operations... editing, assembling, changing the environment settings, entering the debugger etc., can be done without permanently leaving the editor and this makes Devpac very easy to use indeed. From the point of view of 'user-friendliness' then the majority of the improvements stem from the new editor that has been provided. Before looking at the changes in this area, however, let's



deal with the changes that have been made to the assembler itself...

The Devpac 3 Assembler

Devpac's assembler, still called GenAm, can be used both from the editor menu or as a separate program. It has all the goodies expected of a commercial assembler - it supports character constants and binary, decimal, hexadecimal and octal numbers and provides expression handling based on multiplication (*), division (/), addition (+), subtraction (-) and equality (=). Logical operators (bitwise AND, OR, XOR and NOT), left and right shifting, and inequality operations are also supported. The assembler now also provides floating point constants for 68881/2 coprocessor code and allows the programmer to use local labels.

Devpac's GenAm is a macro assembler, in other words it supports the use of pre-written sets of instructions that can be identified by name. Macros can contain parameters which are evaluated as the assembler encounters them - GenAm expands these shorthand forms to the real 68k code equivalent automatically. One useful new addition to the assembler's capabilities is the provision of an INCBIN directive which can be used for including binary files (ideal for loading sprite and general screen graphics data).

GenAm is very flexible and can be easily configured to produce all manner of output. It can create linkable code, executable code, Motorola S-records (an EPROM programmer standard) and it includes powerful debug data options based on the use of SYMBOL and LINE debug hunks (compressed HCLN chunks are also supported). Another new feature worth mentioning is that the assembler now permits the use of pre-assembled include files (the benefit of using such files is faster assembly times).

Whilst talking about hunks and chunks it's also worth mentioning that Devpac 3 allows the programmer to specify chip and fast memory loaded hunks.

Options

One thing worth mentioning for the benefit of existing Devpac users is that the use of privileged instructions can now be controlled using SUPER and USER directives and in general the range of GenAm options has been significantly increased. Options may now be specified by name rather than using cryptic letters and command line support has also been enhanced. Options can be read from a default control file which can, of course, be created using the Devpac editor itself.

Under normal use the assembler is actually controlled from the Devpac editor menu and the assembler options accessed via requesters called up by selecting items on the assembler settings sub-menu. One requester provides assembler optimization settings, another provides control over basic assembler operation (file paths, listing control and so on). A third requester provides the code-generation settings which include selecting PC-relative code generation, processor/coprocessor/MMU selection, opting for local label underscoring and so on.

In use the GenAm assembler is powerful, fast, and the easy access from the editor (which I'll talk about later) is surely going to be a big plus for users who are new to assembly language. Support for the floating point co-processors makes useful material for debate because at one time the average user would have had little chance to use such facilities. With some of the new low-priced accelerator boards, such as the brilliant A5000 and B5000 units from Solid State Leisure, things are changing and so anyone who relishes the thought of attacking their 68881/2 coprocessor chips directly is actually going to be able to do it with Devpac 3!

The Devpac Editor

Some good news is that proper mouse controlled clipboard cut/paste facilities have now been implemented. Marking out a portion of code you wish to copy or cut now simply involves holding down the left mouse button down and dragging the

"Anyone who relishes the thought of attacking their 68881/2 coprocessor chips directly is actually going to be able to do it."

mouse over the required area. These easy-to-use clipboard facilities are a major improvement over the old Devpac editor.

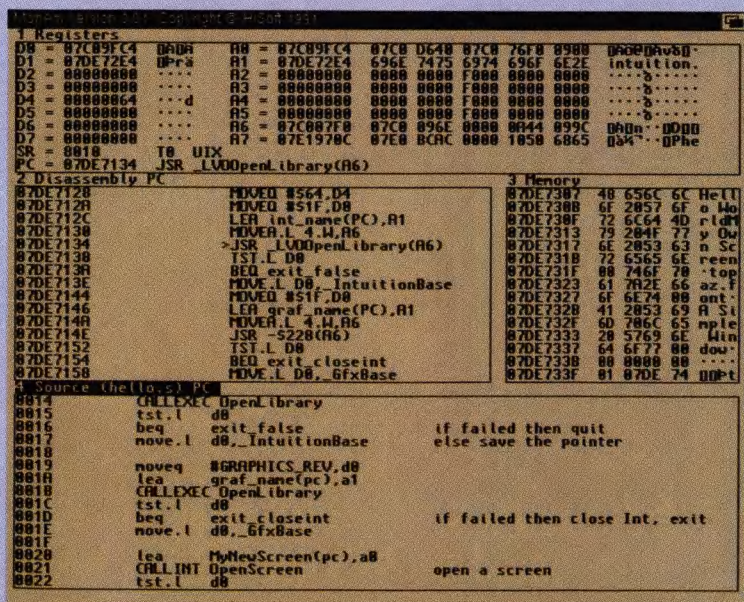
The new editor uses WorkBench 2 style requesters and gadgets (gadgets whose labels cycle through various options, action and check-box gadgets, radio buttons etc). These give the editor a very modern Amiga look but from a practical viewpoint perhaps the most important change is that the editor now not only lets you work with multiple files but allows you to open more than one window in the same file!

Other goodies include a keystroke macro facility, easier to use search and replace options, and a set/locate marker scheme which allows a user to place up to ten storable book-markers within any given project.

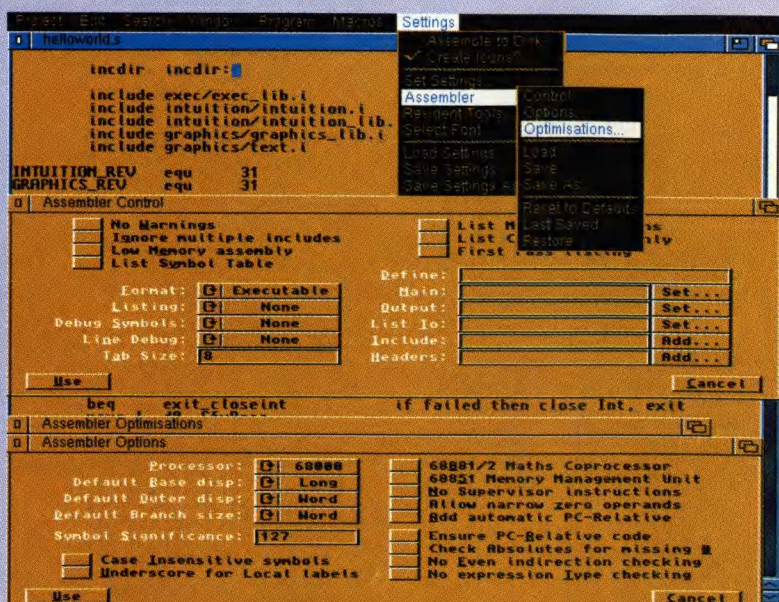
Almost all of the editor's characteristics default to common ready-to-use settings but a menu is available which lets you change (and save to disk) a large number of the editor settings (auto-indentation, back-up creation, tab settings, window and end-of-line characteristics etc). File operations incidentally now use the ASL (or the ARP in the case of the WorkBench 1.3) requester so file location and load/save operations are now much quicker.

As with previous versions of Devpac the new environment provides for the automatic location of errors in the source. Having created the source code using the editor and assembled it you will, if any errors have been found, be returned to the first error in the program. From that point it is possible to use menu operations to move forwards (and backwards if necessary) through the errors that have been identified. Once the code is error free you'll be able to run the program straight from the editor's program menu and this means that you can load or create, assemble, run, and save your code without ever appearing to leave the Devpac editor.

The Devpac editor has a large number of options (far too many to mention in detail) and Amiga-key menu shortcuts or



The powerful debugger



Environment control couldn't be easier

TEST DRIVE

Devpac 3 CONTINUED

◀ Shift, Ctrl or Alt keyboard sequences have been provided as well. As well as the usual things, like being able to set the editor's printing parameters, you can 'lock' projects so that they become read-only (useful for preventing inadvertent changes to files that may have been opened just as clipboard source documents). The user can incidentally, if sufficient memory is available, make the assembler and debugger programs resident!

There are then plenty of changes in the new editor but what is it like to work with? In short... the editor is brilliant and the new options coupled with improved menu-driven links between the editor, assembler and debugger means that the whole process of editing/assembling and debugging is now just about as easy as it ever could be.

The Devpac 3 Debugger

The Devpac 3 debugger is called MonAm and in case you are not sure what a debugger program actually does here's a brief summary. It is a utility which is able to execute another program on a step-by-step basis and, as it steps through a program, it can display code instructions, processor status and register contents, and the contents of specified sections of memory. MonAm is also able to display symbolic data, i.e. it can show the program labels that were used in a program (providing of course that the appropriate debug info was included when the program was assembled).

Some programmers use debuggers a lot, others only reach for the debugger when all other possibilities have been exhausted. I'm one of the latter group and to be honest I usually use the debugger more as an 'investigative tool' rather than a fault finding one. For example, I will often run compiled C code through MonAm just to see what type of

instructions my compiler has been generating. I also use MonAm as a general disassembly tool, programs can be loaded into MonAm and sections of interest disassembled and saved to disk (in disassembled mnemonic form) for further analysis. MonAm can, when looking at compiler generated code containing line number debug info, link into and display the original source code.

"Some programmers use debuggers a lot, others only reach for the debugger when all other possibilities have been exhausted."

The Devpac 3 version of MonAm has a number of enhancements relative to earlier versions and now four window types have been defined. These provide views

dows can be locked to allow interactive monitoring of complex structures and multiple source files can be dealt with (which makes it possible to single-line step multi-module programs line by line from original source).

The Bottom Line

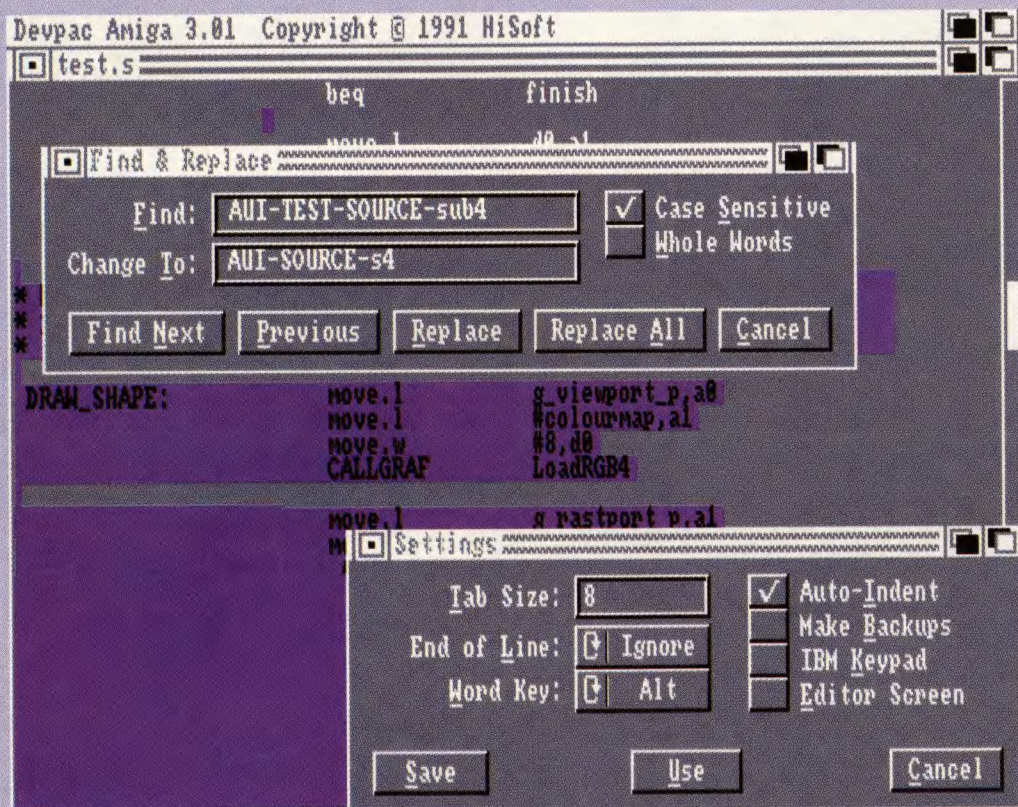
Assembly language is not everybody's cup of tea but most serious Amiga programmers tend to get involved with 68k assembly language sooner or later. In fact most programmers agree that some knowledge of what goes on at the machine instruction level is essential once you get into serious Amiga programming. Once past the initial 'learning curve' problems many programmers actually find assembler programming good fun. It is also a surprisingly cheap programming area to get into because

Devpac 3 costs only £69.95 and, if you are upgrading from Devpac 2, the cost of the new environment falls to just £34.95.

Make no mistake - Devpac 3 offers the Amiga enthusiast a serious tool at a very reasonable cost and if you are interested in using, or learning about, assembly language then Devpac 3 provides THE ideal pathway.

The aim of the new upgrade has clearly been not only to make Devpac more powerful but to make it more 'user friendly' and there is little doubt that HiSoft have succeeded in both of these objectives! The end result is brilliant - the new facilities, better integration,

and more modern look of the new Devpac 3 package are all going to ensure that Devpac 3 will win many new friends. Anyone buying Devpac 3 will be getting an 'as near to the state of the art' assembler environment as I've ever seen!



Even the WorkBench 1.3 version has a WorkBench 2 look

of source code, processor details (register, flag etc.), 68000 mnemonics, and memory contents in hexadecimal or ASCII forms. MonAm recognizes all 680x0 instructions (including the 68040), and understands both maths coprocessor and MMU instructions. The register display has been updated accordingly and since MonAm now allows up to five debugger windows to be displayed simultaneously there is a lot of flexibility available.

There is also a lot of power in the new debugger and again far too many options to mention in detail. The new facilities include a special operator to convert program addresses into source-code line numbers and a reverse operator that can locate any part of the program from its source code position. GenAm win-

Price £69.95

Contact:

HiSoft,

The Old School,

Greenfield,

Bedford MK45 5DE

Tel: 0525 718181

7 Steps to Excellence

1 START WITH A POWERFUL TEXT EDITOR

PageLiner makes typing easy, with a real WorkBench 2 interface and powerful formatting options.

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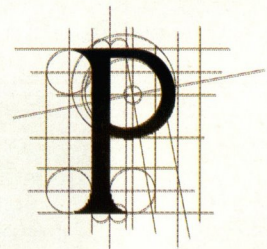
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"PageStream delivers outstanding performance at an outstanding price." — .info

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PageStream 2.2, HotLinks, BME and PageLiner: Winter '91. Art Expression: coming soon.

TEST DRIVE

Jonathan Living
test drives a package that
lets you put things
together as you not
the computer thinks.

THINKER V2.1

Hypertext must rate as one of the most popular buzzwords amongst the Amiga community, and if there's one machine that seems to have been designed specifically for hypertext then the Amiga must surely be it. Superb graphics, a windowing environment and connections with multimedia through Commodore's own CDTV are all evidence of that.

Thinker V2.1 from Poor Person Software is a budget hypertext processor designed to enable the user to construct hypertext documents, linking applications, graphics and text together in a logical and accessible way. Supplied on a single disk (which contains the program and several example documents) Thinker will run quite happily on a basic 512k machine, although Workbench can only be opened with 1MB of memory (or more). And an extra drive (to enable files from other volumes to be pulled in) is almost a necessity if disk swapping is to be largely avoided.

An initial brief look at the manual may leave you with a familiar sinking feeling as references to hierarchical text, subordinate and superordinate statements, branches and paragraphs all seem to focus heavily on hypertext theory rather than the instructions you need to actually use the program. However, help is at hand, and a later tutorial example takes the user through the first few simple steps of generating a document.

Labels

Thinker uses "links" to cause "statements" or "branches" relating to a particular subject to be displayed or moved to. For example, in the statement "AUI is the best Amiga magazine" the user may be intrigued by what exactly AUI is, and taking the mouse and double-clicking on the word AUI, will cause a definition or some facts about the magazine to be displayed.

"A later tutorial example takes the user through the first few simple steps of generating a document."

What has actually happened is that Thinker has searched the hypertext document for a statement or branch which has been labelled with the link reference "AUI" and when found, it was displayed. Labels appear at the very start of a statement or branch and are delimited with "(" and ")" characters.

Further, several labels can be included within the delimiters, so that many link references can cause the labelled text to appear. For example, the label (AUI,AmigaUser) implies that the describing statement will be displayed if either "AUI" or "AmigaUser" are selected using the mouse, negating the need to precisely spell the label in the same way throughout the document. Also, of course, the same statement could be called-up regardless of the tense of the link - the label (jump,jumping,jumped) is one example of this.

If links are required to contain punctuation marks, then they must be delimited by "<" and ">" characters, so that provided a statement labelled (A.U.I) had been defined, then double-clicking on the link <A.U.I> would cause the statement to be displayed. An option exists which will make Thinker accept type-style changes as link delimiters - an example might be to italicise all words in a document which are known to have corresponding labelled statements. This would not only indicate to the user the words which could be expanded upon, but would also produce a far more cosmetic screen display.

Where the power of Thinker really shows through is in its ability to link to graphics files, application programs and projects. In the case of a statement such as "A picture of the Amiga User magazine can be found in <Magazines: front_covers/AUI.iff>", selecting the link enclosed in the greater/less-than signs would cause the IFF graphics file AUI.iff to be displayed, regardless of whether it were a low, medium, high, halfbright or

HAM image.

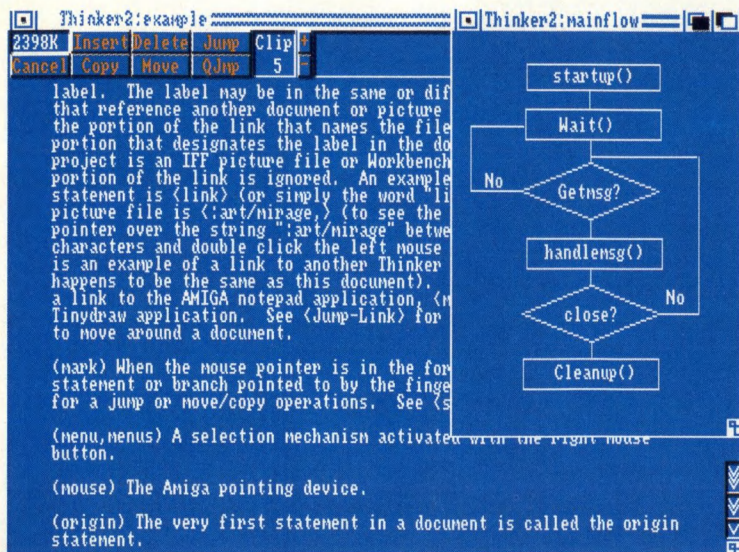
Linking to an application (by using the full volume/path/name of the program as a link) is probably less useful than linking to a project. Projects, just in case you don't know, are files which have a default tool defined within their ".info" file.

When a project is usually selected, such as double-clicking on an icon for a "notepad" document, then "notepad" is launched first and the file is automatically loaded - the same thing happens when a project is accessed through Thinker. This opens up all kinds of possibilities, including the ability to link to sound samples and even compositions - a MED song could be activated using the "MED player" simply by including the song's full path name as a link.

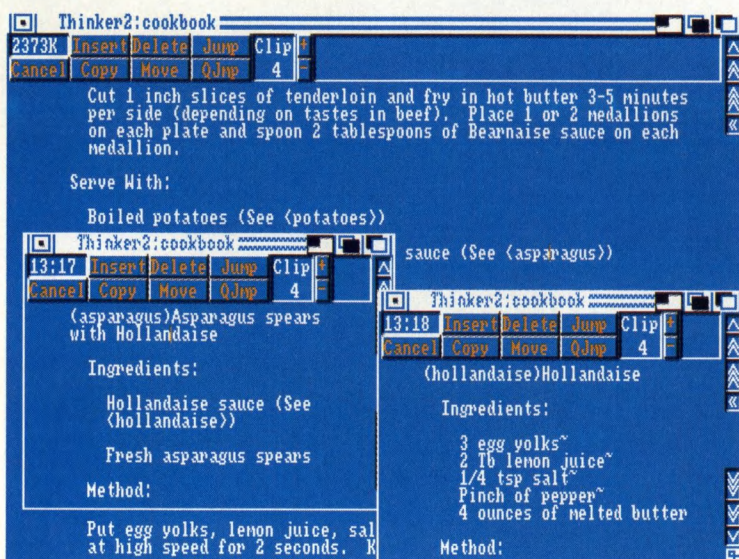
Links

Finally, Thinker can link to any ASCII text files using external links, which specify the file name, character offset and number of characters to be displayed, or a starting point in the file from which the recognition of a search string will cause the remaining part of the file to be displayed for a preset number of characters. This feature, together with the ability to edit read-only files using a clever method of providing a separate read/write "update" file, are both unique to version 2.1, and means that full support for CD-ROM based information is available.

Thinker provides a basic environment for editing hypertext documents, and yet the facilities offered are at least on a par with some of the budget word processors available at the moment. Cut, copy and paste tools are all available, together with type style and colour settings. A search and replace facility is provided, and there is even a 33000 word spelling checker, although unfortunately this uses an American dictionary.



TinyDraw is used to include the line-art diagram "mainflow" when the link <mainflow> is selected.



After linking to <asparagus> and causing a separate window to appear containing the labelled statement, a reference to <hollandaise> was further explored.

As if that weren't enough, text can be imported and exported and standard IFF graphics files can be incorporated into the text using a 4-colour palette. This is in addition to being able to link to an external graphics file, as already mentioned. ARExx support is provided (for key macros, amongst other things) and several text manipulation features (automatic creation of indexes and statement sorting) are included as well.

Options

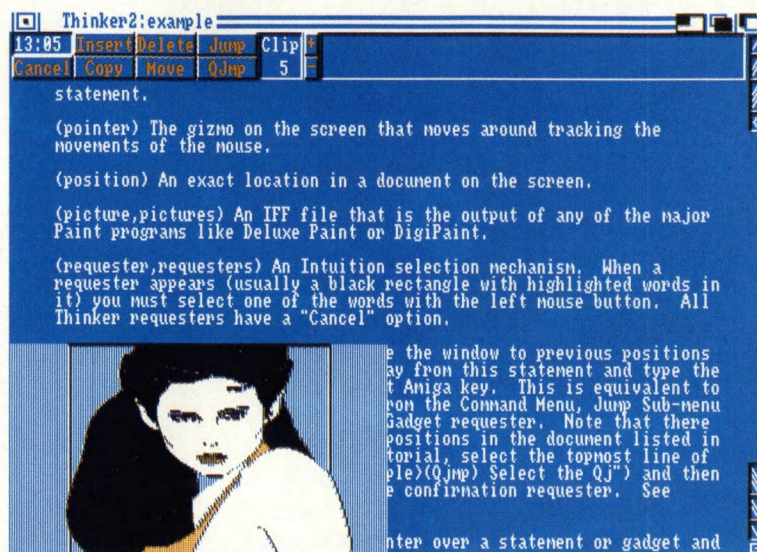
Thinker can be configured in every last detail - from how links are selected with the mouse to whether statement labels are displayed or not, and it is these sundry options, too many in number to even list here, which help to make Thinker the comprehensive program it is. Commands too have numerous possibilities - manually jumping to a statement can be done in one of fourteen ways, for example.

For completeness, Poor Person Software have included a small drawing program with Thinker V2.1. Aptly named "TinyDraw" (presumably because of its minimal memory requirements and limited

number of features) it allows simple 4-colour line art (with text) to be created. TinyDraw is a little awkward to use at times, but it does provide several essential drawing tools and a facility to group drawing elements together to make global changes. TinyDraw projects (which launch TinyDraw when linked to by Thinker) must represent the quickest, easiest and neatest way of incorporating simple diagrams into a document.

"Text can be imported and exported and standard IFF graphics files can be incorporated into the text using a 4-colour palette."

Everything about this product makes a refreshing change from the norm - the manual even goes into great detail not only about the limitations of Thinker, but also the reasons for the limitations. For the most part, restrictions never become



An external graphics file is linked into Thinker with a special feature, allowing an approximate 4-colour display to be used on the Workbench screen.



The simple tutorial example, which demonstrates both the concept of hypertext and hierarchical text in just four lines!

apparent, and Thinker provides sterling performance as a budget hypertext processor.

In comparison with other packages on the Amiga and other machines, Thinker's screen presentation is the only aspect which could be seen as inferior. The slick 3D look of Gold Disk's HyperBook or Microsoft's Windows 3.0 "help" system (on IBM machines) has been abandoned in favour of standard intuition windows, which make the program uninteresting to look at (at least when it is run under Workbench 1.3). However, this is a minor complaint, and one which shouldn't influence your decision when comparing Thinker V2.1 to other programs of its kind. I consider you will find that the merits of speed and ease of use will make Thinker one of the best routes for moving into the hypermedia revolution.

Price: £50.00 Approximately.
Contact: Poor Person Software,
3721 Starr King Circle, Palo Alto,
CA 94306. U.S.A.
Tel: (415) 493-7234

Oktagon

A Perfect Combination?

Reporting from Germany, Hartmut Schumacher investigates a new hard disk / RAM expansion card and finds that togetherness can bring some distinct advantages when it comes to expanding an Amiga.

The most useful - or even necessary - expansions for an Amiga (besides a printer) are 1) a (fast) hard disk, and 2) (much) more RAM.

So what could be more obvious than to combine these two devices? It could be cheaper than buying them separately; you can be sure that they are compatible, and you need less space inside your Amiga 2000 or outside your Amiga 500.

Bsc bueroautomation have been producing hard disk controllers for the Amiga since 1988. In Germany, they are already well known for their fast and reliable "ALF 3" (Amiga Loads Faster) hard disk controllers (see October '91 issue of *AUI*). Now

they have improved this controller, combined it with their established RAM expansion "MemoryMaster" (see December '91 issue) and sell it under the name "Oktagon". There is a version for the Amiga 500's external port (called "Oktagon 508") and a version ("Oktagon 2008") for all Amigas that have internal Zorro II or Zorro III expansion slots (i. e. the Amigas 1500, 2000, 2500, and 3000).

If you are sure that you don't need a RAM expansion (e.g. when you have an accelerator board with real fast 32 bit RAM) you might be interested in the "Oktagon 2000" card which is the same as the "Oktagon 2008" but has no RAM option. As always, it's your money and your choice.

The Controller

The hard disk controller on the "Oktagon" board is an SCSI-2-controller, which, of

uses the RigidDiskBock standard and has an external SCSI port (to easily connect fancy things like streamers, removable hard disks, Toshiba CD ROM drives, optical drives, or simply additional hard disks).

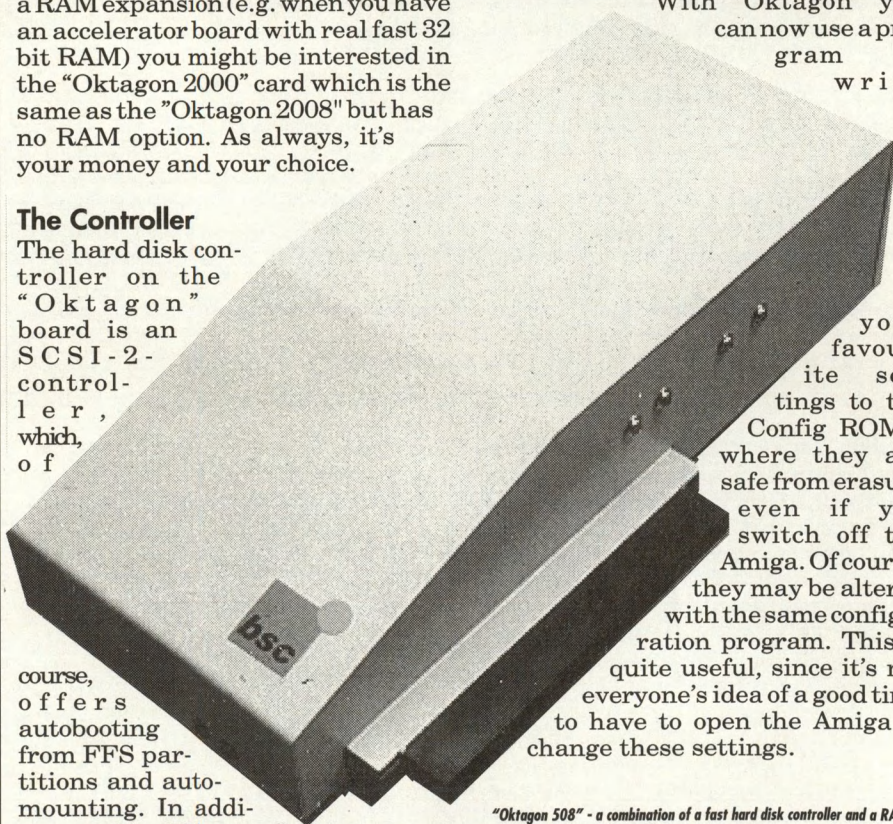
The main difference between "Oktagon" and the "ALF 3" controller is the new Config ROM. Owners of ALF 3 had to use jumpers to determine the controller's settings (like dis-/reconnect or the login option).

With "Oktagon" you can now use a program to write

"Oktagon fortunately doesn't slow down considerably when your Amiga is busy multi-tasking."

course, offers autobooting from FFS partitions and auto-mounting. In addition to this, "Oktagon"

your favourite settings to the Config ROM - where they are safe from erasure even if you switch off the Amiga. Of course, they may be altered with the same configuration program. This is quite useful, since it's not everyone's idea of a good time to have to open the Amiga to change these settings.



"Oktagon 508" - a combination of a fast hard disk controller and a RAM expansion for the Amiga 500.

The Software

In the October '91 issue Mike Nelson called the "ALF" software (which also accompanies the "Oktagon" hardware) "very good indeed", and who am I to argue? I have been using the "ALF" hardware and software (and the "MemoryMaster") for about nine months now and I never had any reason to complain. (Well, to be honest, there WERE a few complaints. Tomas Bothe from bsc told me that some German users moaned about the fact that the "ALF" software is in English. But this should be no problem for you Anglo-Saxons, shouldn't it?)

The installation software is very user friendly, it's easy to use for beginners and at the same time allows the more advanced users to tailor their systems to their own needs.

In addition to the installation software there are some utilities: a test program for the controller and the connections to the hard disks, a performance test, and a program that creates partitions for the Commodore XT or AT cards.

The "Oktagon" software also supports the XT emulator "KCS Power PC Board", the AT emulator "ATonce-Plus", the Macintosh emulator "A-Max II", and the German Atari ST emulator "Chamaeleon 2" from MAXON.

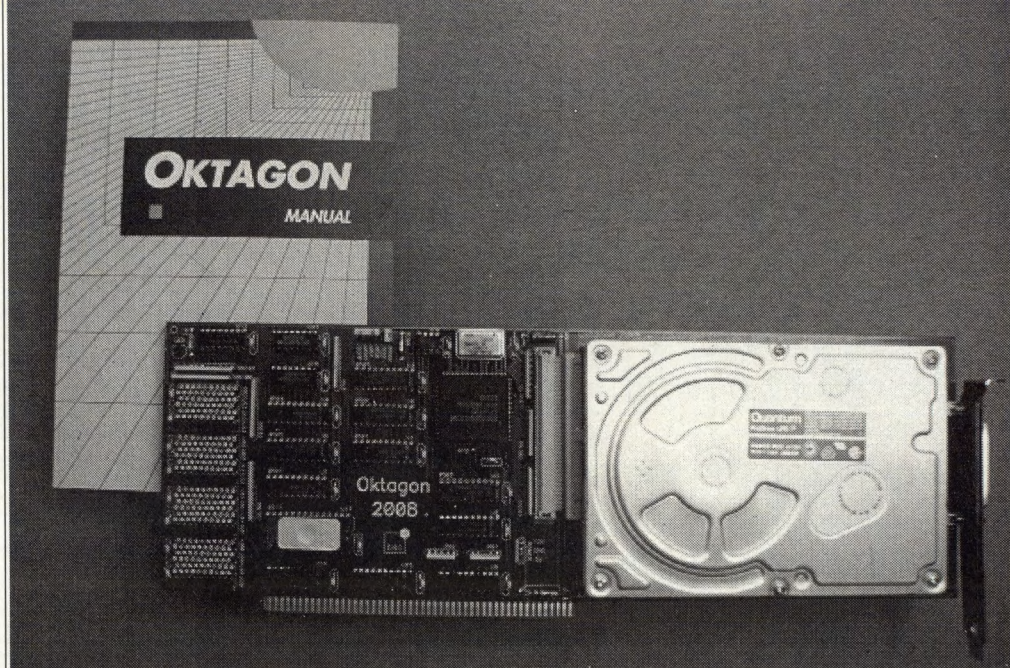
A user password and a frame backup program protect your precious data against curious co-users of your Amiga and against hard disk failures.

The Speed

The performance is comparable with "ALF 3"'s and very satisfying. On an empty 47 MByte partition of a Quantum LPS 105 hard disk and with a test file size of 256 KBytes, Michael Sinz' "DiskSpeed 3.1" (from Fish-Disk £329) gave me the following results:

Create 444 KBytes/s,
Write 809 KBytes/s,
Read 936 KBytes/s.

Tests with other programs resulted in similar figures. It's hard - or to my knowledge even impossible - to find anything faster. Unlike other controllers, "Oktagon" fortunately doesn't slow down considerably when your Amiga is busy multitasking, e.g. when you want to access your hard disk while raytracing a picture as a background task. The test results with simulated CPU and DMA stress are:



"Oktagon 2008" - Owners of an Amiga 2000 don't need to feel neglected.

"With 'Oktagon' you can now use a program to write your favourite settings to the Config ROM - where they are safe from erasure even if you switch off the Amiga."

Create 437 KBytes/s,
Write 809 KBytes/s,
Read 837 KBytes/s.

The FastRAM Expansion

The "Oktagon" controllers "508" and "2008" have a RAM option. That means you can expand your Amiga's memory in steps of 2 MByte simply by placing a few 4 MBit ZIP chips into the appropriate sockets on the controller board. So you can have 2, 4, 6 or 8 MByte additional FastRAM without the need for a second (memory) card (in the Amiga 2000) or a second external case (for the Amiga 500). If you want to expand the memory yourself after buying the card you might be thankful for the test program which checks the RAM chips.

The controller and the expansion RAM can be switched off separately - this is handy for games that won't work with a hard disk but are able to use a RAM expansion (or vice versa, there ARE some strangely programmed games on the market).

The English language manual is a worthy match for the software; the clear structure, the concrete examples and the glossary make it ideal for beginners, and the detailed appendices will appeal to the experts who want to know everything about their new expansion card.

The Result

The Oktagon has been called "a perfect combination". Is that expression really justified? Yes. It's as simple as that. What else did you expect if you combine two excellent and well tested products like "ALF 3" and "MemoryMaster"?

"Some German users moaned about the fact that the 'ALF' software is in English. But this should be no problem for you..."

Product: Oktagon 508 /
Oktagon 2008 / Oktagon 2000
Prices: £179.00 / £179.00 /
£149.00

Oktagon 508 + Quantum 52
LPS: £375.00

Oktagon 2008 + Quantum 52
LPS: \$375.00

Oktagon 2000 + Quantum 52
LPS: £359.00

Contact:
Gasteiner Technologies Ltd.
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London N17 9QU
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Germany
Tel.: (0 10 49) 089 / 357 130 0

or (for Switzerland)

Swisoft
Obergrasse 23
CH - 2502 Biel
Switzerland
Tel.: International +32 - 231 833

or (for North America)

Pre'spect Technics
1085 St. Alendre, Suite 500
PO Box 670, Station H
Montreal, Quebec
Canada H3G 2M6
Tel.: 514 - 954 14 83

TEST DRIVE

Norman Stone has gone down into the Fish Pool and, dripping with slime and weed, has emerged claiming to have sorted out some mackerel from the sprats again this month. As the recent catches of the most notable netter in the P.D. ocean, Fred Fish, you can be sure they are worth taking a look at.

```

FKeys v1.1  03/89
by Torsten Jürgeleit

F1  : back window to front
F2  : front window to back
F3  : activate next window
F4  : activate previous window
F5  : active window to front
F6  : active window to back
F7  : back screen to front
F8  : front screen to back
F9  : open NewWSH window
F10 : show this window

```

Remove

Continue

```

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```

Remove

Continue

FRED

Fishdisk 554:

Mastermind:- This is a board game in which you must work out a combination of colours that are hidden from view. (And if you don't know the game by now, then you are unlikely ever to be able to clai to be one!). There are full instructions included in the game menu, also an option to play using only half a meg, but you will miss a good introduction of which the author states he spent as much time on as the game.

"This game is written in Amos and is shareware"

When you think you have solved the row you can click on a button titled guess this will inform you if you have any correct colours, if you have one or two right it will inform you of that too but it will not tell you which colours are correct, or if they are in the right sequence until they are all correct!! It seems easy at first but it is quite deceiving. This game is written in Amos and is shareware. There is one catch to all this every now and again there is an interruption screen

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which asks you for a donation for the non-interruptible version and for you to become a registered user. It's a good game so pay up and be honest!

Fishdisk 662:

Fkey:- How many times have you found yourself working with loads of windows open when in Workbench etc? And you have to move the windows around and make them smaller so that you can see a window you want to bring to the front by

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```

bBase II - by Robert Bromley

Current File Name : test

(1) Name ..... Norman
(2) Surname ..... Stone
(3) Address ..... 64 Sandford road
(4) Address ..... Chelmsford
(5) Essex ..... Essex
(6) post code ..... cm2 6dg
(7) Tel number ..... Sorry fan mail only
(8) Comments ..... Oh to win the POOLS!!

Record Number : 1
1

<Escape> = End the Search      A = Display ALL Matching Records
F8 = Print this Record        Any other key = Continue Searching

```

```
DEZI: 267 - HEX: 10B - 67. LW DiskEy V2.1 © 1990 by Angela Schmidt
00000002 00000000 00000000 00000048 00000000 00002F597 00000000 00000000
00000000 00000000 00000000 0000045F 00000000 00000457 000004E4 00000000
00000000 00000000 00000000 00000000 00000000 00000000 000004AE 00000000
00000508 00000000 00000000 00000000 00000000 00000000 00000000 00000000
00000000 00000000 0000046B 00000000 00000372 00000000 00000000 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
00000454 00000000 00000000 0000045C 00000000 00000000 00000000 00000000
00000000 00000459 00000000 00000000 0000046E 00000000 00000000 00000468
00000000 00000000 00000004 00000000 00000000 00000451 000003AC 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000001 00000377
00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
00000000 000013E7 000004E4 00000000 00000000 00000000 00000000 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
00000919 000013E7 000004E4 00000000 00000000 00000000 00000000 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
Pause LONG: 1125 WORD: 1125 BYTE: 101
.....H.....»86.....
.....M.....ä.....
.....N.....
.....K.....
.....k.....r.....
.....T.....\.....
.....Y.....n.....h.....
.....Q.....
.....q.....
.....c.....ä.....AmigaLibDisk564.....
.....ö.....
.....c.....ä.....
+ - DRV 1 + - CYL 40
+ - BLK 880 + - SEC. 0
+ - TRK 80 + - HEAD 0
No error during operation
DOS BLOCK USED - TYP ROOT
AmigaLibDisk564
```



```

00000002 00000000 00000000 00000048 00000000 00000000 00000000 00000000
00000000 00000000 00000000 0000004F 00000000 000000457 0000004E4 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000044E 00000000
00000508 00000000 00000000 00000000 00000000 00000000 00000000 00000044E

CHECKDISK: Errors will be displayed at the right lower table!

Starting at track => #0
Last track to use => #159

Checking track 159

0 errors being detected!

Pause LONG: 1125 WORD: 1125 BYTE: 101

+ - DRV 1 + - CYL 40
+ - BLK 880 + - SEC 0
+ - TRK 80 + - HEAD 0

Now let's see what we got 'ere..
DOS BLOCK USED - TYP ROOT
AmigaLibDisk564

```

FISH

clicking on the top right hand corner of that particular window... Well with this program your troubles and time are made a lot smaller. Instead of dragging windows around, this program converts the function keys to do all the work for you.

F1 brings the back window to the Front, F2 = front to back, F3 Activate next window, F4 = activate previous window, F5 = Active window to front, F6 = Active window to back, F7 = Back screen to front, F8 = Front screen to

back, F9 = Open NEWWSH window, F10 = Show this window, I think a lot of people who do a fair bit of multi-tasking will find this program a great boon.

Guru:- When I had an Amiga 1.3 (before I went mad and bought a 500+) the amount of times a Guru came up and it was a case of "!"??" It" and shut down and start again! Sometimes you think why on earth did that happen? Was it the RAM? Or some program in memory that conflicted

"A lot of people who do a fair bit of multi-tasking will find this program a great boon"

with what you wanted to do? So you wrote the Guru code down then you started thumbing through a stack of books trying to identify the code. If you are lucky enough to match the code, the information sometimes leaves you cold because it is a bit sketchy. Of course you may even be a loyal Amiga User International longtime reader and have saved the CRIB CARDS that were given free with AUI when it was launched as the first U.K. Amiga magazine way back when, as I did (I'm really

```

DiskKey V2.1 © 1990 by Angela Schmidt

00000002 00000000 00000000 00000048 00000000 00000000 00000000 00000000
00000000 00000000 00000000 0000004F 00000000 000000457 0000004E4 00000000
00000000 00000000 00000000 00000000 00000000 00000000 00000044E 00000000
00000508 00000000 00000000 00000000 00000000 00000000 00000000 00000044E

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Pause LONG: 1125 WORD: 1125 BYTE: 101

+ - DRV 1 + - CYL 40
+ - BLK 880 + - SEC 0
+ - TRK 80 + - HEAD 0

Now let's see what we got 'ere..
DOS BLOCK USED - TYP ROOT
AmigaLibDisk564

```

```

1 : Norman : Stone : 64 Sandford road : Chelmsford : Essex : cm2 6dq : Sorry
*** No More Matching Records ***

```


TEST DRIVE

FRED FISH

C o n t i n u e d

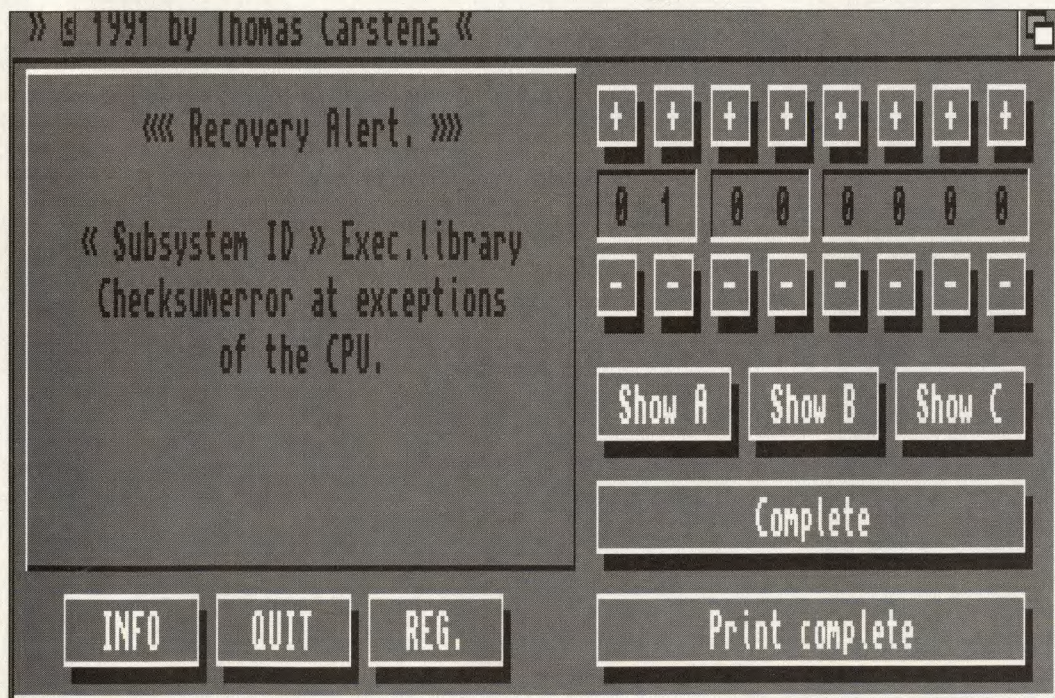
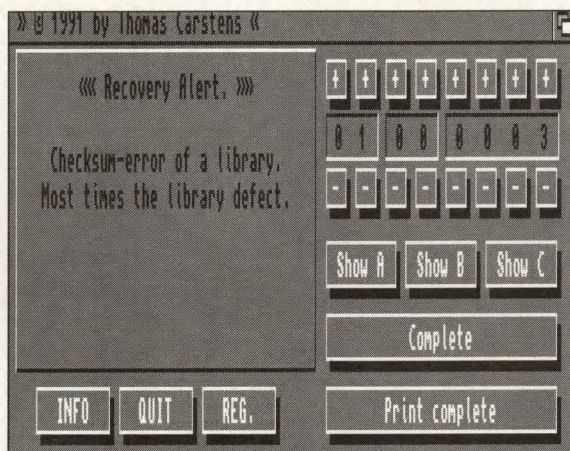
showing my age now!!).

Well, this program saves you all that hassle, just click on the buttons on the window and it will tell you what each individual number means or you can have the complete code shown to you. It is so easy, OK, you may not be able to do a lot about some of the gurus but you would at least know what caused it and possibly avoid such a crash next time.

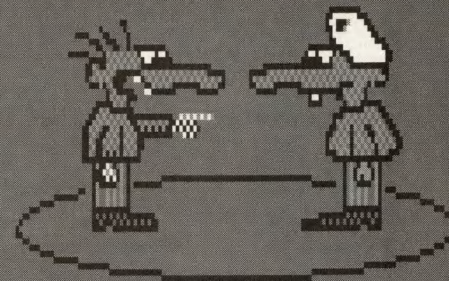
Bbase-: Have you stored all your addresses on various bits of paper? Or all the dates when you made that vintage wine and the various types of fruit used to make it? How about all those birthdays anniversaries- the list is endless. Well, now you can stop hoarding those dozens of bits of paper and use this database.

You will need one meg to run this program properly. It gives you the choice of up to 9 fields per record and a maximum of 46 characters per field, you may store a total of 600 records. You have to be careful you do not exceed this otherwise it apparently exits un-graciously. You can run this database either using the keyboard or mouse you can use the

cursor keys to go up and down through the records. There are two icons that both hold the same documents for the program, one is as normal so you can read it and the other one is already prepared for printing. You just click on the icon and it is sent straight to the printer. This means you do not have to edit the various unwanted large bits of space between paragraphs as you sometimes have with documents. This is a waste of disk space, one would be enough, but I do like



ShowGuru V 2.1 b



the idea of preparing the document for printing.

The arp Library is required to run this program. True, it may not be as powerful as some commercial databases but for a freebie you can't beat it.

Fishdisk 564:

Diskey:- When I saw this program loaded and running on my Amiga I was pleased with the ease you could use it. I have tried other disk editors and found they were rather unuser friendly, but this one not only allows you to read and write to a disk but will also check if there are any faults on the sectors. It then displays where the faults are and what they are.

There is one large hex window and below that there are two ASCII windows to display where you are in the hex window, and just below the left hand ASCII window is a smaller window which allows you to choose which block track, cylinder, or sector you wish to see. You control this by using a + or a - sign. On the error check display you can choose which track you wish to start at and which you wish to finish on. There is also the usual search system which can search for upper or lower case. There is also an iconify gadget.

There is a built in safety feature so if you wish to write to a sector it will come back and ask you if this is correct. An added feature with this program is a disassembler. Another bonus this has which most other disk editors do not, is that it also checks the bookblock of the disk for a virus. There are so many different items for you to use that I cannot list them all- the Editor might object if I took up another page or so! This is one utility you should not be without.

Well, that is all for this month, we shall be looking for some more fish for you. I just hope my line can take the strain of hauling these big ones out, don't forget these Fish disks can be obtained through ICPUG.

INNOVATIVE EDUCATIONAL SOFTWARE FOR THE 1990s



spell it

colin wins!

Confusion eliminated!
Children learn lower case before capital letters. To ensure that they are not confused by the capitals on a keyboard, picture book is supplied with two FREE keyboard overlays. They both convert your keyboard to lower case - you choose whether to retain the usual qwerty arrangement or use an alphabetical one.

picture book

"picture book" is a fabulous and friendly welcome to computers. It is the ideal first software package for any child taking them from touching their first key to see what happens right through to elementary spelling and counting.

This suite of four colourful programs all use superb pictures and great sounds to keep children happy for hours as they learn.

alphabet book: An animated electronic version of a child's first abc book. Children love exploring the keyboard, seeing the pictures and learning the words.

spell it: This enjoyable introduction to spelling has two levels. Beginners can first learn how to spell the words then move to the more challenging test level.

count 'em: Using a variety of different pictures children have great fun learning to count. With three levels children will soon master the numbers up to nine.

snap: An entertaining educational version of the popular game. It's for up to three players and has three levels: match pictures to pictures, words or letters.

"I loved Picture Book."
- Computer Shopper

"Educationally sound and user friendly."
- Amiga Shopper

"Make sure they get this."
- Early Times

Recommended for ages: 2 to 5

Money Matters

Money Matters has been carefully designed by teachers to help children to progress from their first encounter with coins right through the early stages of the National Curriculum. Children using Money Matters will learn how to recognise coins, how to use them in simple contexts, how they can solve problems involving different sums of money and more - especially AT2 (number) levels 2. and 3.

Cozmo's Coins: Here's a clown who knows the name of every British coin from 1p to £2. He wants to make sure that all children do too. Cozmo really makes discovering currency fun.

Boingy: Adding coins together is Boingy's speciality. He asks children to try to find the single coin that is the same value as the ones he shows. He gives them lots of help if it's needed.

Piggy Bank: Toothy thinks of a number of pence and knows exactly which coins add up to it. Children have to work out what he's thinking of and press the coins on the keyboard.

Fizzy Pop: Knowing how to calculate the correct change is important when you're shopping. Fizzy sells sweets - children have to help him give the correct coins as change.

"Exceptional value for money."
- Micro Computer Mart

"Colourful and imaginative software."
- Computer Shopper

"It is fun and very educational."
- STUNN!

Recommended for ages: 2 to 11

which coin do these add up to?

pence given to me for these

7p 7p 13p 13p
what change do I give?

The keyboard overlay
Money Matters comes with an easily fitted keyboard overlay to help children build up their coin recognition skills. They can now answer questions by pressing the appropriate coin rather than be limited by the design of a normal keyboard. The overlay can easily be removed when it's not needed.

Target Maths

Target Maths

Target Maths is a suite of four cleverly designed educational programs that are such fun to play they make children want to come back for more. Aimed at children and National Curriculum targets, they are fun for everyone - even adults. The targets specifically covered are listed in the programs.

ELIMINATOR: Probably the most challenging way to practise tables ever - AT2 Level 3 and AT3, Level 4

NUMBER FACTS: Explore numbers and discover their properties, then play the game - AT3, Level 5

SCALE FACTOR: Learn to read rulers and other scales with confidence - AT2, Level 4

SLIDER: A computer version of Snakes and Ladders, with a difference - AT2, Level 6 and AT3, Level 6

LEVEL 3

Move the pointer to 4.5 + 2.5
then press RETURN

"A solid workhorse with some flair, originality and a straightforward objective."
- The Micro User

"You will discover that Maths can be FUN!"
- STUNN!

Recommended for ages: 6 to 13

DataWord

Recommended for ages: 7 to 99

DataWord is ideally suited to many tasks in the National Curriculum that demand the use of a Database. And that's not all! Dataword is also a simple-to-use word processor and it's powerful record linking system gives it many more uses too: It's a really flexible cross-curricular piece of software.

- * An ideal introduction to the world of database technology.
- * Designed with ease of use as a priority.
- * Fulfills many of the needs for a database in the National Curriculum.
- * Works just like a card index.

DataWord can be used as a word processor too!

- * Comes complete with FIVE fascinating example files.
- * Comes complete with two FREE lower-case keyboard overlays - you can have the keys in alphabetical order if you prefer.

"It's a wordprocessor and database but it also has the added advantage of being a multiple choice question tester, quiz game and more."
- Micro Computer Mart

PRICES

Amiga, ST, Archimedes, A3000 & PC	BBC & C64 5 1/4" Disc	BBC Master Compact & CPC Disc.	Electron, BBC, Spectrum, C64 & CPC Tape
£19.95	£14.95	£15.95	£12.95

SPECIAL OFFER

Buy any two of these superb products directly from us and you can deduct £10 from the total price!

"The Triple R range ... An absolute essential for parents that consider education important." - Micro Computer Mart

"Triple R Education is a new company masterminded by Peter Davidson, the Design and Project Manager of the award winning Fun School 2 - and it shows." - Amiga Shopper

"Where it is needed a keyboard overlay is provided. These are very hardwearing." - STUNN!

"This is by far the most fun and educational set of programs I have seen." - Micro Computer Mart

IBM/PC • Amiga • ST • BBC • Archimedes • & others!

Triple 'R' Education, 1 Percy Street, Sheffield, S3 8AU, England.

ORDER by mail or telephone 0742 780370 ACCESS and VISA accepted

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MANAGER and more

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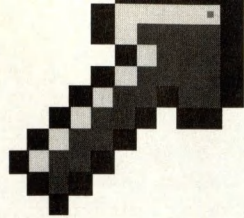
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Picture This Desirable
Residence...

Newsfile compiled and
edited by Anthony Mael
and Martin Witton.



NEWSFILE

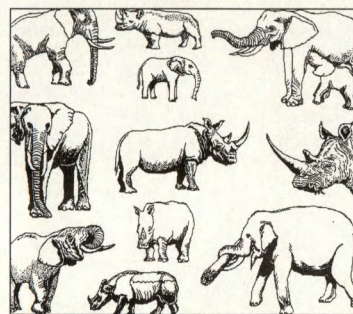
ARTWORKS THEMATIC CLIP ART

Artworks have announced an additional two new disks - Signs and Symbols and Wild Animals - to complement the 452 images available from their thematic clip art library. The library includes themes such as Pets, Castles, Cottages and Churches and Trees.

The disks cost £6.99 each or £6.00 each when buying three or more - giving over 900 images on five disks for £30.00. Each disk comes with a poster showing all the images to be viewed without the aid of another program.

Artworks' Thematic Clip Art can be used with any Amiga art, desk top publishing and word publishing programmes. All the images are IFF, bit-mapped and black and white. They have been produced to give clear, high quality images when printed out using any basic

printer. The clip art can be coloured, repeated, combined, reversed, enlarged, reduced, stretched, cut and used in animations or with video. Two more titles will be released in May - Fantasy Figures and Prehistoric Life.
Contact: Artworks, 1 Pond View, Wootton, Ulceby, South Humberside, DN39 6SF.
Tel: 0469 588138.



Artworks Clip Art

Domark's CHAMPIONSHIP MANAGER and much more

Domark have announced their latest contribution to the culture of the universe.

CHAMPIONSHIP MANAGER

As manager, working with data and statistics, it is your task to guide your chosen team(s) through the Barclays League championship season, whilst competing in the F.A. Cup, Domark Trophy and Challenge Cup tournaments. (What no England national team too?)

The entire British League is represented, plus non-league clubs. With a bit of success behind you, the door to Europe opens and you will face the great Continental clubs in the European Cup, the UEFA Cup and the European Cup Winners Cup. The pressure mounts as you struggle to build a cohesive squad, hiring and firing players and backroom staff, deciding team tactics and making financial investments. Keeping the board of directors happy will play a part in your glory and spoils of victory. Naturally you will pay the price if you fail. (Don't we all?)

Some other games from Domark too are:

RACE DRIVIN'

A new simulation of the established Hard Drivin' game with two new tracks in addition to the original

stunt and speed tracks. You will test your skills on the Super Stunt Track, and ride the challenge of the Corkscrew Loop, the Jump Loop-a-loop, with a section missing at the apex - or hurtle round the treacherous hairpin bends of the narrow mountain roads.

Race Drivin' is, say Domark, faster than Hard Drivin' and other new features include the Buddy race, where your fastest lap is re-run by the phantom car so that your friend can race it to beat your best time. Put two computers together, link them up and you can take part in a head-to-head challenge where

there can only be one winner. (Could that be Domark?) RRP £24.99.

TNT II DOUBLE DYNAMITE.

A new compilation of five Tengen titles including: Hydra, Skull & Crossbones, Hard Drivin' 11 (16 bit), Escape from the Planet of the Robot Monsters (8 bit), Badlands and S.T.U.N. Runner. A varied and entertaining selection of games says Domark. They would, wouldn't they? Price £24.99.

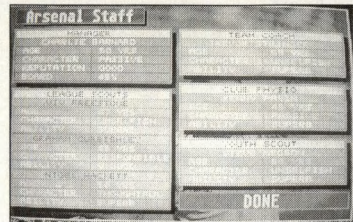
SHADOWLANDS

Shadowlands is a role playing game filled with fiendish traps, hidden hazards and challenges which are illuminated through Photoscape, a dynamic lighting system.

Corpses, skeletons and monsters lurk around every corner - some fatally attracted to the light you carry, others repelled by it! (No doubt Andy Moss loves it!)

Shadowlands, claims Domark, keeps you guessing, as you use your supernatural powers to control the minds of others. Following an ancient legend, your chosen four travellers search for your natural remains to take them to the Altar to be reunited with your spirit.

Contact: Domark Software Ltd., Ferry House, 51-57 Lacy Road, Putney, London SW15 1PR.
Tel: 081 780 2222.



You and Taylor can manage it all.

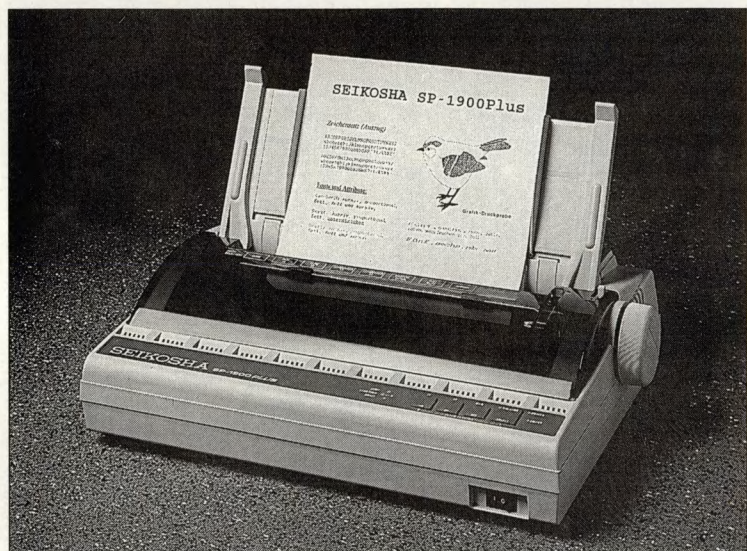


SEIKOSHA PERSONAL PRINTER

Seikosha have 'unveiled' a new entry level personal printer - the SP1900 Plus - a nine pin dot matrix machine, offering, Seikosha modestly claim "Quality printing, versatile functionality with an outstanding price/performance ratio". "Armed with a price tag of £155" Seikosha continue, "the

NLQ. Noise levels have been kept to a minimum, say Seikosha.

Standard Epson FX850 and IBM Proprinter II emulations have been built in offering compatibility with almost all software products. Hardware compatibility is ensured with a standard parallel interface. A serial interface is an option.



new SP1900 Plus will aggressively attack the end user (Oh no - not 'end user' again although I suppose it's honest - the last people to be considered - if the word 'people' is an anathema to computer salespeople, try using 'Home user'!), education and small business markets". Do they want to be 'aggressively attacked'? Salesfolk will stoop to anything these days it seems!

The SP1900 Plus is capable of speeds of 192cps (12cpi) in fast mode, 160cps in draft and 40cps in

The SP1900 Plus offers two built in fonts - Serif and Sans Serif - with a choice of numerous typesizes and type sizes. Users can also take advantage of the character downloadable facility. The SP1900 Plus can handle a variety of paper types and sizes including A4, letter, legal, multipart stationery, continuous paper and labels.

Contact: Seikosha (UK) Ltd., Unit 14, Poyle 14, Newlands Drive, Colnbrook, Slough, Berkshire. Tel: 0204 848444.

SPACE SAVING IS AN ARM'S LENGTH AWAY

Is your VDU cramping your style? Accodata has launched a range of products designed to solve the lack of workspace space in offices. The range, called Space Swivel Arms, operates by supporting the VDU monitor above and away from the workspace, "freeing up valuable space for writing and other activities." (Well, we know what goes on on desks don't we!)

There are four models in the range that vary in complexity from the very simple to the very sophisticated. All models rotate by 360 degrees to allow the user maximum flexibility. They incorporate a balance/tilt mechanism to keep the monitor horizontal and there is a retractable shelf that supports the keyboard when not in use.

Apart from saving space, the Swivel Arms raises the screen to eye-level, which helps to prevent eye strain and improves posture, and two of the models are height adjustable. The top of the range model has gas action fingertip control.

The Space Swivel Arms fit onto walls or desks, and come with a universal clamp kit. They range in price from £101.00 and £269.50.

Contact: Accodata, Nepicar House, London Road, Wrotham Heath, Kent. TN15 7RS. Tel: 0732 885555.



Improve your posture and save space.

Give Your 500 A Shot At Being 2000

Slingshot is a new device that attaches to the A500 expansion bus, providing the user with one A2000 compatible expansion slot. It works with any A2000 compatible card that does not require the A2000 video or CPU slots. A one year warranty is also included.

Suggested retail price: \$39.95. (About £25.00)

Contact: Micro R&D, 137 N. 7th Loup City, NE 68853. Tel: (800) 527 8797.

MAJOR SOFTWARE HOUSES BACK AMIGA CDTV

Commodore have told **AUI** that major software houses are now backing Amiga CDTV with dual-format releases of their top titles slated for release this year. Dual-formatting means that publishers will simultaneously produce titles for the Amiga and CDTV. The move comes as the CDTV market starts to take shape with the introduction of the CD Rom Drive for the Amiga due later in the Spring.

Andrew Ball, Commodore spokesman, told **AUI** "We expect the introduction of the Amiga CD Rom Drive to create a user base of 100,000 in a very short period creating a market for CDTV that publishers cannot afford to ignore. We already have backing from the major software houses and we expect others to follow suit".

"Using the same technology to develop for both the Amiga and CDTV is an extremely cost effective method of producing software for two formats", commented Jonathan Ellis, managing director of Psygnosis. "We will be releasing some of our major titles on CDTV this year."

The CDTV is based on Amiga technology, so developers can use their Amiga expertise to produce dual-format software often using the extra capacity of the CD to enhance their latest products.

Publishing on CDTV format has another major advantage, say Commodore. It is very difficult and costly to copy the disks and so greatly reduces the risk of piracy.

Mark Lewis, Managing Director of Electronic Arts, said: "The introduction of the Amiga CD ROM drive will push the CDTV market forward. Dual formatting for the Amiga and CDTV will become a cost effective way to reach two markets. We are currently looking at releasing both our education and 'edutainment' software on CD."

ASDG becomes Charitable

The Muscular Dystrophy Association, The American Red Cross and the American Cancer Society are to benefit from the release of an arcade style game from ASDG. The game, Ring War, will be distributed by electronic bulletin board systems and other freely redistributable software distribution channels. A voluntary donation of \$10.00 is requested to be sent to one of the three charities, for which ASDG provides the names and addresses.

ASDG are specialists in Colour Image Processing and best known for their Art Department Professional package. They deny that they are out to challenge the likes of Ocean, Psygnosis and U.S. Gold just yet. But time will tell. . .

Contact: ASDG Inc., 925 Stewart Street, Madison, Wisconsin, USA 53713. Tel: 608 273 6585.

NEW RESOURCE DISASSEMBLER

The Puzzle Factory Inc. have introduced a new version of ReSource, the disassembler for Amigas. ReSource V5 runs on any 680x0 CPU, but automatically detects the presence of an 020/030 CPU and runs faster routines if possible. ReSource V5 allows the user to output either traditional 68K syntax, or the new Motorola M68000 Family assembly language syntax, and is fully compatible with the Macro68 assembler.

On-line help facility featuring hypertext word indexing is now included. This enables the user to

get in-depth help about any function at the touch of a key. ReSource V5 disassembles hundreds of thousands of lines per minute from executable files, binary files, memory or disk blocks. Full use is made of the Amiga windowing environment. There are over 900 menu functions which allow you to create real assembler source code. Resource V5 requires Version 1.3 or later of the Amiga OS, at least 1 Meg of memory and supercedes all previous versions.

**Contact: The Puzzle Factory Inc.,
PO BOX 986, Veneta, OR 97487.**

COMPUTER SECURITY.. Not much of it.

More than half of UK organisations have suffered a significant security breach during the last five years according to survey results conducted by the National Computing Centre. The survey, carried out in conjunction with ICL, the Department of Trade and Industry and Elsevier Publications, spanned three months of research and covered organisations of all sizes. The sample was taken from 8,270 information technology managers, and investigated different types of security breaches. The results demonstrate the depth and costs of both physical security breaches, including theft, lightning and flood, as well as logical breaches such as hacking and software viruses.

Many of the respondents

showed that no measures had been taken as a result of the Computer Misuse Act and demonstrated a lack of computer security awareness.

Bill Murray, Head of Telecommunications and Security Division at the NCC told **AUI** "The research has provided good qualitative and quantitative results that indicate the extent of security breaches and the nature of the problems that companies have suffered. The results highlight the need for contingency plans for security policies".

The company hope that the survey will raise awareness of the business implications of lack of security. The report is available price £145.00

**Contact: Steve Wood at the NCC
on 061 228 6333.**

ICPUG Around the U.K.

In response to a number of requests on how to contact ICPUG, we are publishing a list - supplied by ICPUG - of their contacts and meeting groups around the U.K.

ICPUG REGIONAL GROUP CONTACTS: (And not a woman amongst them, Janet Bickerstaff!)

ANDOVER (proposed)

Contact: Ron Geere - 0264 790003
evenings or weekends

ANGLESEY

Contact: Nick Massey - 0407 765221
Meets every Monday 6-9 pm at Holyhead Unemployed Workers Club. All machines welcome from C64 to Amiga. (And their owners too!)

AYR

Contact: John Smith - 0292 261408
Ext. 202
Meet at Radix Training Centre, West Sanquhar Road, Ayr.

CARDIFF (proposed)

Contact: Ian Kelly - 0222 513815

COVENTRY

Contact: John Orange - 0203 689635
Meet on the 2nd Tuesday of the Month at the Telepost Club,

Northbrook Road, Coventry. Cover 64/128, Amiga and PC. Bring your computers.

DUBLIN

Contact: Geoffrey Reeves - 010 353 12 883863
Meet fortnightly on Fridays (except in August) at St. Andrews College. Covers all Ireland 36 Page Newsletter. Discounts.

EDINBURGH

Contact: Amiga Centre of Scotland - 031 557 4242

LEEDS (proposed)

Contact: Robert Eyre - 0532 487691

MACCLESFIELD

Contact: Peter Richardson - 0298 23644
Meet at the Harlequin Club, Chestergate, Macclesfield, every Tuesday from 8 - 11pm.

MERSEYSIDE

Contact: George Titherington - 051 521 2553

MID THAMES

Contact: Mike Hatt - 0753 645728
Meet at Cox Green Community Centre, SW of Maidenhead, on second Thursday of the month at 7.30. Open nights and some talks. Newsletter.

SOLENT

Contact: Anthony Dimmer - 0705 254969
Meet at GEC Aerospace Sports and Social Club (Ex Plessey), Titchfield, Hants, first Tuesday of the month at 7.30. Open nights and some talks.

SOUTH COAST (MOSTLY PCs)

Contact: Brian Wise - 0903 787559
Meet 2nd Tuesday and last Thursday of the month.

SOUTH EAST

Contact: John Bickerstaff - 081 651 5436
Meet every Thursday except first Thursday of the month at Biggin Hill Library, Church Road, Biggin Hill, Kent, at 7.45. Open nights, lectures, Public Domain nights. 24 page Newsletter. Technical help.

SOUTH WEST

Contact: Peter Miles - 0297 60339
Meet second Sunday of the month at Queens Arms Hotel, Charmouth, Dorset, at 10.30 am. Bring your computers. Some talks.

STEVENAGE

Contact: Brian Grainger - 0438 727925
Meet Hertford Road Community Centre, Stevenage, last Friday of the month at 7.30pm.

WATFORD

Contact: Mark Pryor - 0442 864234
Meet St. Thomas Church Hall, Watford, third Wednesday at 7.30pm. Friendly club. Membership £15.

WEST RIDING

Contact: Kevin Morton - 0532 537318
Meet at the White Horse Inn, Fall Lane, East Ardsley, Wakefield, first and third Tuesdays at 7pm. Open nights. Minibus to London computer shows.

WIGAN

Contact: Brian Caswell - 0942 213402

SPECIAL INTEREST GROUPS:

FOR DISABLED PEOPLE

Contact: David Bate - 71 Bedford Rd. Bootle, Merseyside, L20 7DN.

1520 PLOTTER

Contact: John Bentley - 06286 65932

If you would like to start an ICPUG group in your area, contact Brian Wise, Regional Organiser, for information and advice. Tel: 0903 787559.

FAST GUIDE TO AMIGA CLI

California-based Vidia have produced a Fast Guide to Amiga CLI to help users requiring a quick reference to AmigaDos. The book covers AmigaDos 2.0 as well as 1.3 and points out the differences between the two versions of AmigaDos for those people who are upgrading. The alphabetized descriptions claim to cover every option of every command. (Every one? Wow!).

The book supplies many examples so that users can use even unfamiliar commands quickly. Sections discussing scripts, devices, filenames, pattern matching, redirection, piping, and Shell commands are also included.

How much for this little gem? A tiny £5.00 (\$8.95). Sounds very cheap, doesn't it?

Contact: Vidia, P.O. Box 1180, Manhattan Beach, CA 90266. Tel: (213) 379 7139.

PROFESSIONAL DRAW CLIPS

ArtisticClips is a new volume of clip art in the Professional Draw clip format, covering nine subject areas ranging from animals to transportation. The volume comes with a manual which not only shows all the images, but also contains hints on using them in various programs. The images show a high level of detail and have colours which have been chosen to produce optimum results when printed using both black and white and colour printers.

These images can be printed using any program that imports Professional Draw clips.

Suggested retail price \$44.95. (About £30.00)

Contact: Artistic Software, 55 Selwyn Place, Kanata, Ontario, K2K 1P1. Canada. Tel: (613) 591 6039.

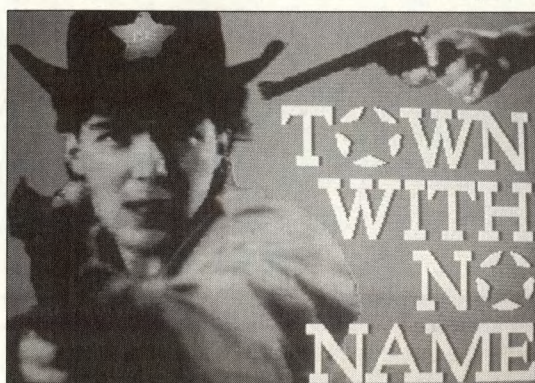
ON-LINE'S TOWN WITH NO NAME

The Multimedia experience has taken another step forward according to Fergus McNeill, the Director and creative force behind 'Town with No Name' the latest release for CDTV from On-Line.

the amount of money that went into TWNN was nearly ten times more than we would spend on a floppy disk game" he told **AUI**.

Town with No Name takes you way out west where 'there are places you shouldn't go, people

you shouldn't mess with and meals that ventilate your britches'. So when the Man with No Horse rode into town and shot Evil Eb's littlest brother, it could only mean one thing; Mr. Diablo's Undertakin' Emporium was going to be busy. Play the leading role as the story



McNeill thinks that being a Multimedia Director is like being a Hollywood Director, "You are dealing with almost the same processes. The visual language is also pretty identical. In fact most of the technology and many of the results are the same. The only obvious difference is we work without the luxury of being able to be a few million dollars over budget. Even though

unfolds around you, but remember the hole in the head gang don't take prisoners. (It's take no prisoners time for us all these days. Ed.)

Available for CDTV only, at £29.95 or \$50. Available in English, French, German, Spanish and Italian.

For other languages consult Gospodan Clementi Cham-beriski at On Line.



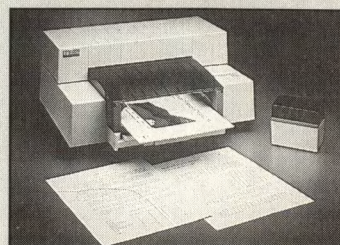
DESKJET 500C - FROM ACTION

Hewlett Packard's DeskJet 500C is the colour version of the DeskJet 500, claimed to be the world's best-selling inkjet printer. It offers full colour and mono printing at 300 dpi, and it is, say Action, ideal for the user who works in mono but requires occasional colour.

It is offered by Action at £499.00, including a three-year depot warranty, but this can be upgraded to a three-year on-site warranty for £50.00.

The DeskJet 500C uses HP PCL Level 3 printer language, and prints at 240 cps in draft mode and 120 cps in LQ mode. Colour output at normal quality is typically four minutes per page, rising to up to seven minutes per page in special high quality mode. Features include 20 resident fonts, a 48-KB buffer, parallel and serial interface and a 100-sheet A4 paper input tray. Action sells leading brands of computer supplies, hardware, PC and MAC software, datacomms equipment, magnetic media, office equipment and furniture at discounted prices directly to end users (end user? is that the last person to use it - or the person left with, for example, the last glob of toothpaste? - No apparently it's jargon for the general public) through its 544-page free catalogue, and provides a free telephone service on 0800 333 333 and a free fax service on 0800 102030.

Contact: Action Computer Supplies, Alperton House, Bridgewater Rd, Wembley, Middlesex. HA0 1EH. Tel: 0800 333 333.



NEW A500+ RAM EXPANSION

Frontier Software have announced the availability of a new Amiga 500 Plus upgrade - the Xtra-RAM A500+.

Fitted by the user, without having to send the A500 Plus away, the Xtra-RAM A500+ slots into the trap door underneath the A500+ without any soldering or the need to open the A500+. Whilst not invalidating the computer's guarantee, the Xtra-RAM A500+ itself carries a two year guarantee and a ten day money back offer.

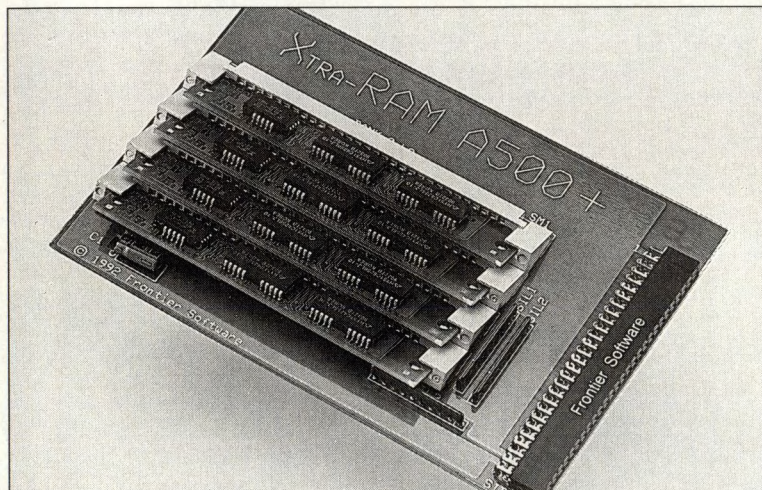
Fitted in minutes say Frontier (How many minutes?), the 1/2MB Xtra-RAM A500+ upgrades the ChipRAM of the A500+ to 1 1/2 MB while the 1MB Xtra-RAM A500+ takes the ChipRAM up to 2MB. The 1/2MB Xtra-RAM A500+ can later have its memory increased to 1MB by simply adding extra memory.

The Xtra-RAM A500+ is popu-

lated with either two industry standard 256K SIMMs (Single In-Line Memory Modules) to give 1/2 MB or four 256K SIMMs to give 1MB. The Xtra-RAM A500+ has been designed to use both 8 bit and 9 bit SIMMs of 100ns (nanoseconds) or faster. Frontier told **AUT** that this is a unique use of SIMMs and it makes the Xtra-RAM A500+ much easier to upgrade than similar chip-based RAM expansions because there is less likelihood of damaging the memory. The SIMMs can be used later in other 16 bit computers.

The retail prices including VAT are: Xtra-RAM A500+ unpopulated (OMB) £15.99; Xtra-RAM A500+ 1/2MB £34.99; Xtra-RAM A500+ 1MB £49.99.

Contact: Frontier Software, P.O. Box 113, Harrogate, North Yorkshire, HG2 0BE.
Tel: 0423 567140/530577.



LOGITECH TEAMS UP WITH GRAVIS

Research in the UK has shown that around 120,000 joysticks are now being sold across all formats every month, with PC units accounting for between 6,000 and 7,000 of these, according to Logitech.

The largest increase in Europe is said to be coming from sales in the medium to high price range, with buyers finding that the life cycle of low end products is too limited.

"A low end joystick has a life expectancy of around three months

- or about 100 hours of use - which has created a huge replacement market", says Raffaella Ettorre, the Logitech executive who has now taken over as Director of Gravis Europe.

An initial survey undertaken by Logitech and Gravis has revealed that sales of joysticks in Europe are currently enjoying an annual growth rate of around 30 per cent - as opposed to 16 per cent in the US - and will be worth close to US\$ 93 million (about £65 million) in 1992.

AMIGA INFOCHANNEL USED NATIONWIDE

Thorn EMI in Norway has become the first chain of stores to use Amigas with InfoChannel as its main advertising medium at all points of sale.

Last November Amiga 2000 computers with the Info Channel information program were introduced in the majority of Thorn's shops. Soon the system will be used in each of the 27 stores throughout Norway, the northernmost of which is in Tromsø, far beyond the Arctic Circle.

Stores are being carefully chosen to maximise displays to the public. Those favoured are close to main shopping areas where people gather, such as at bus stops, so that products can be advertised freely.

Using TV as the basis of all campaigns at the points of sale also means that all advertising material can be updated at the same time. At present the campaign scripts are sent on disks to all stores. In the future it is envisaged that data broadcast will take over the transfer of information.

Hotels are also the target for improved information systems and InfoChannel has been offered to hotel customers.

Besides national advertising campaigns, Thorn uses InfoChannel for the promotion of special offers locally, and it is used for the distribution of internal information at the Oslo headquarters. In addition, it will soon be used to send internal information to all branch offices.

InfoChannel is produced by the same company that created Scala of which there is a usable demo on this month's Coverdisk.

DIGITAL LANDSCAPE 2.0.

Digiscap Software have released Digital Landscape 2.0, a 3-D terrain modelling software package. The program produces 3-D solid and wire frame surfaces, profiles and colour contour renderings. Other features include the loading of ASCII text files, latitude and longitude indicators, an increased grid size and visible controls for easy rendering. The program also includes three elevation disks with over 40,000 elevations covering the US.

Suggested retail price: \$124.95. (About £85.00)

Contact: Digiscap Software, P.O. Box 113058, Carrollton, TX 75011 3058 USA.
Tel: (214) 241 9891.

THE MOUSE TAKES TO THE AIR

With Selecttech's Air Mouse Remote Control the user can, say it creators, with one hand, manage presentations from anywhere in a room. (Upside down too?). Dispensing with the need to be next to the equipment gives one the freedom to enliven the delivery of any public presentation and impress the audience! (Or avoid the rotten tomatoes!).

They say all standard computer-mouse functions are supported. Pull down menus, point and click, click and drag, open and close files are all features of this handy little gadget. How much does this present for the Amiga-user-who-has everything- cost? A not exactly mousy \$595.00 - a mere £400 or so. Don't all rush...

Contact: Selecttech Ltd, 30 Mountain View Drive, Colchester, VT 05446.
Tel: (802) 655 9600.



ACCOUNTS	Monitors 14"	9.87	INTEGRATED PACKAGES	BBC Emulator	35.72
Arena Integrated Ac.	Amiga 500	7.99	Appelizer	Byte 'N Back	19.74
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Cashbook Controller	Maths Adventure	24.91	Office By Gold Disk	Directory Manager	35.72
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Amiga Basic In/Out	Picture Book <8	19.74	AMOS Creator	TurboPrint Pro	44.65
Amiga C Beginners	Primary Maths	24.44	Arrex	X Copy Professional	37.60
Amiga For Beginners	EDITORS		C PD (5 Disks)	VIDEO Also see Hardware	
Assembly Lang Prgrm	CygnusEd Pro 2	59.69	Devpac 2 Assembler	Broadcast Titr	184.01
CBM ROM Kt Ines&Docs	Turbo Text	59.69	Devpac 3 Assembler	Digi View Gold 4	109.98
CBM Hardware Ref Mnl	GRAPHICS		GFA Basic Compiler	GD Fonts: Dec 1	64.86
CBM ROM Kt Libraries	Animation Studio	79.90	GFA Basic Interp.	Hitachi Camera/Lens	204.45
CBM ROM Kt Devices	Deluxe Photolab	56.40	HighSpeed Pascal	Home Titr	34.78
CBM Service M1 A500	Deluxe Paint 3	49.82	HiSoft Bas. Compiler	Rendale 8802 Genlock	189.88
CBM Schem. A2000/6	Deluxe Paint 4	54.86	Lattice C 5.1	RockGen Genlock	99.64
CBM AmigaDOS Manual	Deluxe Video 3	69.56	Logo	Scala Presentations	179.54
Using And The Amiga	Digi Paint 3	54.05	Pascal PD	Scala 500	79.90
Using Arrex Amiga	Imagine 3D Modelling	169.67	RIBBONS	ShowMaker	229.83
CABLES 100 Lines Stocked	Piximate	39.95	6 CBM MPS1230	Video Ease Titr	37.60
D23S-D9P IBM CGA	Real 3D 1.3	119.85	6 CBM MPS1500	Video Titr	84.60
D23S-D15P NEC MS 3D	Real 3D Turbo 2MB	329.94	3 CBM MPS1500 Colour	Video Complete Solutn.	159.80
D23S D23P Extension	Scene Generator	35.72	6 Citizen 1200	Video Director	139.59
D23S/2 Photo-Scan	Scenery Animator	69.56	SOUND Also see Hardware	WORDPROCESSORS	
D25P-C3P 2M Printer	Sculpt Animate 4D 2MB	337.23	Audiomaster 4 S/W	Excellence 2	69.56
D25P-D25P 9W 2M Modem	Sharp Colour Scanner	599.72	Bars & Pipes Pro	Final Copy DP/DTF	79.90
11.28	Take 2 Animation	89.77	Deluxe Music	Kindwords 2	36.66
D25P-D25P 25W 2M	HARDWARE		GVP D. Sound Studio	PenPal 1.3	59.69
DINSP-DINSP MIDI	IBM A500 RAM Exp.	54.99	MIDI Plug Interface	Personal Write	29.61
Gender Changers	3 1/2" External Drive	58.75	Music X Junior	Protext 5.5	101.99
Joystick/Mouse switch	3 1/2" Int A2000 Drive	58.75	Sequencer One	Protext 4.3	49.82
Null Modem Cable	512K A500 RAM/Clock	29.61	Sonic 2 Composer	ProWrite 3.7	99.64
Socket D23S & Hood	Amiga 1500 & Software	579.98	Sound Trap 3 Sampler	QuickWrite	39.95
Switch Box D25S X 2	Amiga 1500 & 2 Drives	519.82	Sound Master Sampler	Scribble Platinum	42.77
COMMUNICATIONS	Amiga 1500 & 1 Drive	489.74	Stereo Master Sampler	TransWrite	32.90
Comms PD (2 Disks)	Amiga 3000 16/40	1999.85	SuperJAM! Composer	Wordperfect	189.88
COMPUTER AIDED DESIGN	Chip CTA 8520A	14.57	SPREADSHEETS	Wordworth	87.89
Professional Draw 2	Chip ECS Denise	39.95	Advantage	PLEASE CHECK AVAILABILITY	
X CAD 2000	Chip ECS ROM 2.04	37.60	DGCalc 512x52	OF ITEMS MARKED WITH AN	
DATABASE MANAGERS	Chip Fatter Agnus1MB	61.10	Superlan	ASTERISK	
Homebase	Chip ROM 1.3	29.61	UTILITIES	PLEASE SEND S.A.E. FOR	
Image Finder	CSA 62030 2.5MHZ Film	349.95	Ami-Back SCSI Backup	CATALOGUE	
InfoFile	GVP 68030 22MH 1-13MB	539.56	B.A.D. Optimiser		
Mailshot Plus	Prodata 1.2x	69.56			
Prodata 1.2x	Superbase Personal	26.79			
Superbase Personal	Superbase Personal 2	34.78			
Superbase Prof 4	Superbase Prof 4	179.54			
DESKTOP PUBLISHING					
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AmigaTeX Typesetting	GVP A2000 120MB 0-8MB	559.77			
Gold Disk Type (each)	Naksha Mouse & Game	29.61			
Outline Fonts	Quantum 52MB SCSI HD	199.75			
PageSetter 2	RAM Chip 256K CMOS	6.11			
Pagestream 2.2	RAM SIMM 1MB	34.78			
Pro Clips Str. Art	ROM Sharer	24.91			
Pro Page 2.7 2MB	SCSI HD Case & PSU	119.85			
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MEMORY: Assume 1MB RAM to load, unless stated.
Visitors are always welcome by appointment

Turbo Tales

No. 1 of a series of 94.



Once upon a time, in the land of the free, there was a third-party Amiga Peripheral Manufacturer. It made wonderful and exciting products, which were generally perceived to be reliable and of Great Value. The company sold untold numbers to the people of the world, who by and large were very happy. One day, they announced a new product, a 68040 accelerator card that was claimed to be a Great new Force, the fastest in the world. Unfortunately, for many months no-one in the world could find one of these mystical beasts in order to verify the claims. It seems, for the moment at least, that the Force will not be with you. Meanwhile, down at RCS, the boys and girls were ordering champagne to celebrate their first year of FUSION-FORTY production

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APRIL 1992 **AUI**

FIELD REPORT

AmiEXPO - California '92

CONTINUED

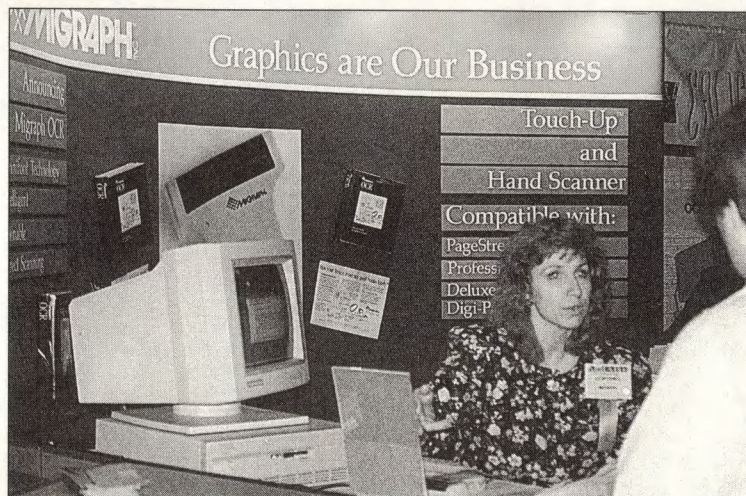
considerable production costs of Mr. Magnum. CSA haven't forgotten the masses of A500 users who are on the look out for some extra horsepower, and despite Commodore's protestations that this machine is not designed for expansion, they continue to develop faster accelerators. Their latest is called the '38 special, its name in keeping with the gun theme of its big Magnum brother. This board contains a 38 MHz 68030, a 50 MHz 68882 and either 4 or 8 Mb of 32 bit RAM. Up to 40% quicker than a standard A3000, this is one for the speed freaks.

While we're on the subject of CSA, there are some pretty well-founded rumours of a famous rock band using Amigas accelerated with Magnums to produce a surreal film based around virtual reality. Tangerine Dream, no less, are now into Amiga technology and are looking to use the machines in their stage show. Can hardly wait to see that one!

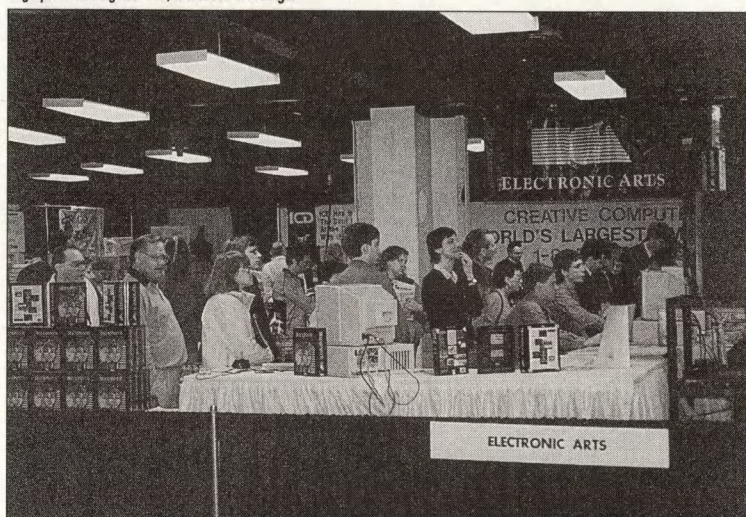
Graphics

The best graphics product on display was undoubtedly the Digital Micronics Resolver board. This will be reviewed in full next month, but as a taster, can you imagine the graphics offered by a 2048 x 2048, 256 colours from a 24-bit palette card? Neither could I until I saw them - the effect is breathtaking and there is a myriad of interesting avenues opened up by this technology. Support comes from such people as Commodore themselves, Oxxi, ASDG, and several of the 3D graphics authors. I have talked about "retargettable graphics" in previous articles and the process is gaining momentum now with a functional Workbench emulation on this Texas Instruments based card. It's a bit slow, but this was only the first showing of the product, and seeing Workbench rendered in all those pixels is a wonderful sight for sore eyes.

Digital Micronics have also released a really useful storage device called a Floptical Drive. Again, this will be reviewed fully in a subsequent issue, but it basically involves using 20 Mb 3.5" floppy disks. Yes, those figures are correct - the disks look like regular floppies, but closer examination reveals them to be optical devices, hence the massive



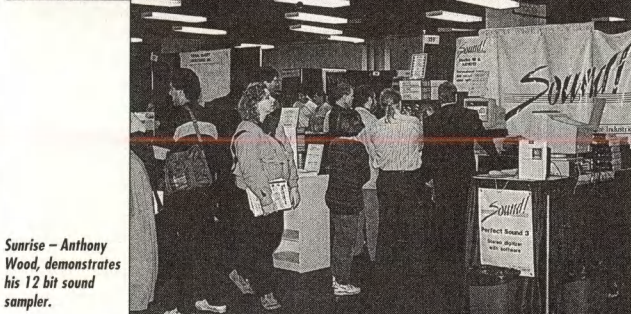
Migraph's scanning and OCR, a first for the Amiga.



E. A. draws the crowds for DP IV.



Steve Niker of CSA (on right) beams over his 040's.



Sunrise - Anthony Wood, demonstrates his 12 bit sound sampler.

Amiga users wander where once transatlantic voyagers cruised.



storage potential. This device requires a SCSI interface (DMI can supply one), and costs around \$650.

Other Hardware

Inovatronics, Texan suppliers of Cando, were proud to show off our very own Checkmate's HiQ Tower expansion for the Amiga 500. The critical pricing of a product such as this has been helped enormously by Commodore's recent doubling of the cost of an A2000. It is now \$1000 cheaper to buy a new A500 and transplant the internals straight into a HiQ for a really tidy looking computer. Inovatronics tried desperately to show that darned Toaster hard at work in the HiQ video slot, but the miserably old Agnus in the motherboard refused to boot the software, despite the fact that the hardware seemed more than willing to work.

Supra, purveyors of fine Modems and hard drives were doing their purveying, and also introduced the FAX-modem idea which allows the Amiga to both send and receive documents over the 'phone, as well as all the usual fun things that you can get up to with a Modem. They are also pushing their 500XP SupraDrive which challenges the GVP equivalent with similar speed and expansion possibilities.

ICD are another company famous for their add-ons, and their range of nifty internal drives for the Amiga 500 has been expanded to include 40 and 60 Mb options. They have also managed to combine their AdSpeed accelerator with the AdIDE interface to provide a 2 in 1 solution for those wanting to double processing speed without going to a 68030. A 14 MHz 68000 is included with the drive interface so your A500 is kept free from huge bolt-on extensions, and this innovation begs the question "Why don't Commodore try this for the next Amiga?" Maybe they will...

Sunrise Industries were also present, and Anthony Wood, chief everything, was demonstrating their new 12-bit sound card and the really fancy software to drive it. This is nothing particularly new as I reported on the AD1012 exactly a year ago from New York, but the difference this time is that people were actually buying them and walking off. Sunrise see the AD1012 and Studio 16 software as being ideal for professional musicians who want higher resolution sounds than the Amiga's hardware can manage, and also videographers wanting to add special sound effects to their work

will find the board useful.

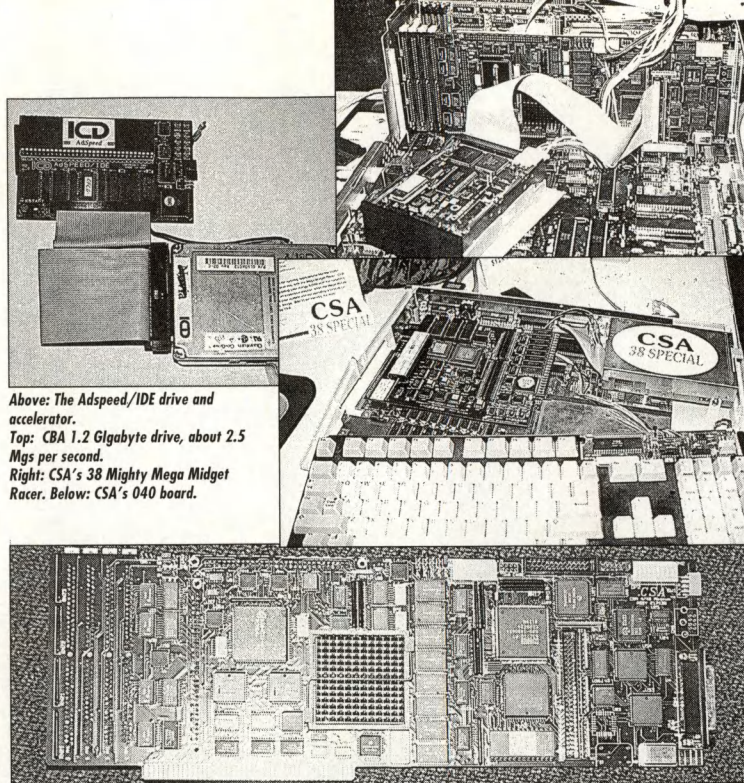
Scanning is an area where the Amiga traditionally lags behind its PC or Mac counterparts, but all that could change pretty soon. Already, ADPro has sophisticated driver and image processing tools, and all that's missing is decent OCR software. Optical Character Recognition is a method for scanning in text from printed documents and the computer converts the bitmap image which is only good for graphics programs into ASCII text that can be happily whizzed around word processors or DTP programs. Using an "Omnifont" engine derived from the world of UNIX, MiGraph have developed a very powerful OCR system which they claim is over 99% accurate. When it can't be sure of getting the character correct (maybe because of a weird shape or dead fly squashed on the page), it gives you a number of guesses from which to choose, and also the option of learning that particular outline. This should be a boon to people who waste hours just copying text from magazines or journals, or to people who like squashing flies for posterity.

Software

There was relatively little totally new hardware on show in Long Beach, partly because of the absence of innovative companies like Great Valley Products and Progressive Peripherals. This didn't stop the software developers from pulling out any stops which may have needed pulling out. Major releases or previews were the order of the day, and least significant for us Europeans was the Version 2.0 Video Toaster upgrade. NewTek didn't actually turn up with their massive "Pink Floyd" style stage because it was being shipped to a dedicated video show in Dallas, and as they are still working on building a TARDIS, something had to give.

Mark Randall turned up to launch what he called "the biggest software upgrade in micro-computer history". If you've wondered why there is a disk shortage at present, it's a combination of Oxixi's Presentation Master (16 floppies) and Toaster 2.0 (15 disks), shipping simultaneously. The latter, when uncompressed onto a hard drive fills a chunky 30 Mb of space, enough to send GVP scurrying back to their drawing boards.

NewTek have also started to build in wrapping the picture onto spheres and the depressing thing about it all is that they reckon they are still only tapping about 50% of the hardware's potential.



Above: The Adspeed/IDE drive and accelerator.
Top: CBA 1.2 GigaByte drive, about 2.5 Mgs per second.
Right: CSA's 386 Mighty Mega Midget Racer. Below: CSA's 040 board.

This means we will not see a PAL Toaster in the foreseeable future, unless anyone else can think of a way around the problems.

Enough of things we can't use, and on to one of the Amiga's best known products. Gold Disk revealed the new 3.0 version of Professional Page, still my favorite DTP program. At first sight, it doesn't look desperately different to the older version, but a close look at the icons reveals a gadget that looks suspiciously like a lamp, and sure enough a quick rub with the mouse (well, if you can allow a bit of poetic license), and POOF! a genie appears. OK, so it isn't quite the puff of smoke and "your wish is my command" sort of thing that Aladdin is made of, but the idea is roughly the same in that a requester full of options is opened up. These "genies" are used to automate the more demanding phases of laying out pages and adding typographical oddities such as drop capitals at the press of a button. Keith Hughes of Gold Disk told me that this was a direct response to the pleas of people who found the conventional box system used by DTP programs to be too confusing and wanted something simple, yet powerful to use. There are over 30 of these Genies, and 300 ARexx functions so even if your wish isn't covered by a Genie, you can always write your own!

Not to be outdone by Gold Disk, the other major force in Amiga DTP, SoftLogik, weighed in with some exciting new upgrades to their PageStream product, which you can read about in this *AUI* elsewhere.

ADPro, from the ASDG peo-

ple, led by the effervescent Perry "Without fuel there's no motion, where's the beer?" Kivolowitz, were showing off the latest release, 2.1. Originally designed as a bug fix, the boys couldn't resist a few extra features, including FRED the frame editor. This is a more friendly method for controlling the unique batch processing of ADPro without having to suss out ARexx programming. Perry showed me a video of an Amiga-generated logo fading in and out over a picture which was created automatically by ADPro batch processing - another fascinating direction for the Amiga, and one which doesn't need that darn Toaster thing. We will feature ASDG in next month's "Made in the USA", and very interesting reading it will make as Perry gave me some subtle hints about a mysterious new project...

Oxixi were present with Gary Bonham demonstrating his brilliant Presentation Master program, reviewed in this *AUI*. It's been a few weeks since the final version was shipped, but Gary has not exactly been on holiday, with new modules already being hammered out on his A3000. Support for the stunning Resolver board mentioned above is among the priorities, as is a full ARexx interface to keep things in line with other Amiga software. I managed to get Gary to "time out" from the rigors of the exhibition for an interesting interview which will be published next month. Oxixi were also proudly showing their Novell networking software which allows Amigas to slide seamlessly into this standard PC environment and access resources such as

printers or storage devices, as well as speak to these lower machines..

There are several companies offering high quality disk-based backgrounds for video work and peripherals such as SMPTE controllers or Time-Base Correctors seem to be in abundance. There was even a lone guy selling knee-mounted keyboard pillows which are supposed to eliminate the strain of typing, and reduce carpal tunnel syndrome. Having struggled 5500 miles back to the UK with this plastic and polystyrene monster, I can only say that the effort was worthwhile and anyone who wants one can write in for the manufacturers' address, or trade me a 40/4 Magnum for it instead!

War of the Expos

In the US, there are two main Amiga shows, one of which is supported by Commodore, and the more independent AmiEXPO which was started by enthusiasts of the New York user group. Until recently the latter was sponsored by Amiga World, a slightly famous US magazine, but not quite as good as the pages you hold eagerly. The problems started when the two rival companies started scheduling shows to run at the same time, often in the same place, and not surprisingly the developers got more than a little miffed by the thought of being in two places at the same time. This led to a boycott by the major players until something was sorted out. The situation has yet to be completely resolved, and the next World of Commodore is in New York in April.

The 1992 Winter AmiEXPO was a successful event again, despite the Californian weather taking a turn for the worst. (In terms of L.A. weather, it was almost like Judgement Day). Thousands filed through the exhibition hall to take in the new, the not quite so new, and the old but still damn good sides of the Amiga. I, for one, am glad I made the 10 hour trip to Long Beach as the trip was rewarded with a whole pile of interesting new products which we will tell you about over the coming months. I haven't mentioned everything in this report, but rest assured, *AUI* will leave no stone unturned in telling all at the earliest opportunity. As usual, unlike other UK magazines, we will not, however, print unsubstantiated rumours off networks which are unconstructive and potentially damaging to the Amiga, .

COLOURPIC PLUS

JCL have announced the release of a top-of-range real-time colour video digitiser.

Using the latest technology JCL have combined all the features present in their best selling ColourPic digitiser with the AniMate system as standard and an impressive number of new features together with new software to bring out, what they told *AUI* is "one of the most powerful, state of the art, desk top video machines available to the Amiga user in its price range".

ColourPic Plus can grab a field or frame from a live video source in

1/25th of a second. Images are stored and displayed in the framestore in 64,000 colours. You may think, say JCL, "The picture is a straight through connection from the video input, but don't be deceived - this is a digital picture - just press the Z key to freeze!"

Pictures can be moved into the Amiga and converted into any format, HAM, EHB, 32 colour or even monochrome grey scale. Then saved in IFF format (including 24 bit), AIM, RAW and TARGA. ColourPic Plus can digitise in lo-res, hi-res, interface and HAM modes.

You can adjust the colour, brightness or contrast of the picture from within the software. Using sliders, modify the picture and display the result. You can use filter and masking options for special effects. Produce X and Y flips, mirror images, multiple images, shrink and magnify parts of an image. Looks like a new digitising star.

Contact: JCL Business Systems Ltd, 71 St John's Road, Tunbridge Wells, Kent, TN4 9TT, England.

**Tel: 0892 518181
Fax: 0892 511772**

DISNEY PRODUCTS FROM INFOGRAMS

Infoframes are releasing their Disney products on the Amiga, having previously been available only on PC.

The first of the products available for the Amiga include: Hare Raising Havoc (£25.99); Dick Tracy - The Crime Solving Adventure (£30.99); and Mickey's Crossword Puzzle Maker (£25.99).

Those due for release later are: The Sound Source (an accessory that brings compatible software to life with high-quality speech, fully orchestrated music and real-life sound effects); The Rocketeer; The Animation Studio; Mickey's ABCs - A Day at the Fair; Mickey's 123s - The Big Surprise Party; Mickey's Colours & Shapes - The Dazzling Magic Show; Mickey's Jigsaw Puzzles; and Mickey's Memory Challenge.

Contact: Infogrames, 18A, Old Town, Clapham, London, SW4 0LB. Tel: 071 738 8199.

CD ROM EUROPE 92

The CD ROM Europe '92 Conference and Exhibition is on 31st March to 2nd April 1992, at the Metropole, Brighton.

The event, now in its fourth year, is the showcase for CD ROM technologies, products services and applications.

The six-stream, three day conference will include an introduction to CD ROM and multimedia, and is especially for educationalists (Tuesday March 31), business users (Wednesday April 1) and the

CD ROM industry and publishers (Thursday April 2nd).

Speakers will highlight applications in education, training, publishing, technical documentation, libraries, finance, and marketing and retailing. The formats under discussion will include CD ROM, CD ROM XA, CD-I, DVI Technology, CDTV, Photo CD and Sony's Data Discman.

Each half day session will conclude with a panel discussion, with the opportunity for delegates to put their questions to the speakers.

Delegates will be able to purchase half-day or full-day conference places. Bona fide educationalists will be able to apply for a special reduction in the cost of attending the education stream.

CD ROM technology as is becoming apparent is now being regarded as a major medium for multimedia as it is efficient for integrating text, image and sound. It is already being used by thousands of organisations to access and distribute information.

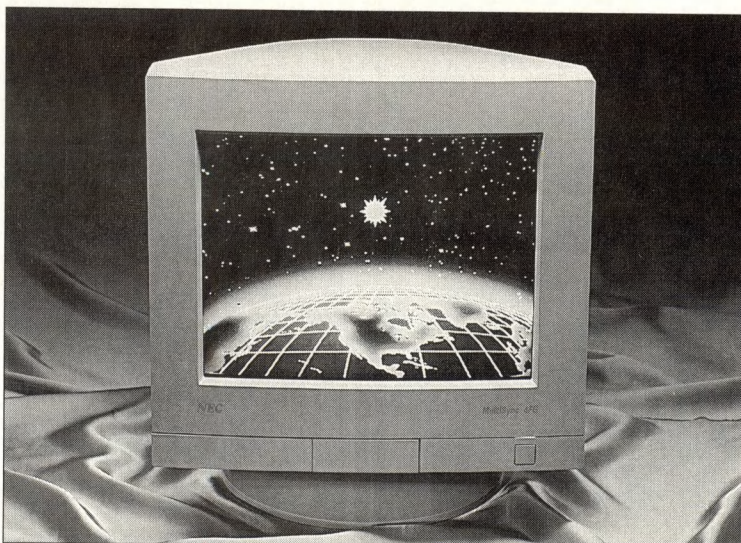
Contact: ID Exhibitions - +44 (0) 733 394761.

NEC'S LATEST MULTISYNCH

Flatter, squarer tubes, with dark tint screens, edge-to-edge imaging and low radiation are the main features of a range of three new colour monitors from NEC, producers of multisynch monitors.

The Multisynch 4FG, is offered by Action complete with manual, power cable and VGA cable at £509.00 (MRP £799.00). It has a 15-inch dark tint screen, and offers resolution of 1024 x 768 (non-interlaced). Compatibility is VGA, 8514/A, XGA, SVGA, 1024 x 768; dot pitch is 0.28 mm.

Contact: Action Computer Supplies, Alperton House, Bridgewater Road, Wembley, Middlesex, HA0 1EH. Tel: 0800 333 333.



A Packet of Crisper Colours

The Video Crisper from The Memory Location (Where is that?) is designed, say its manufacturers, to sharpen and brighten up all of the colours on your screen, particularly when you use graphics programs and workbench screen and of course entertainment programs. The unit plugs into the Amiga RGB port and no soldering is required. An enhanced version, designed for use with external genlocks, is also available.

Suggested retail price: \$49.00 (About £35.00) (\$149.00 - about £90.00) for the enhanced version.

Contact: The Memory Location, 396 Washington St. Wellesley, MA 02181. Tel: (617) 237 6846.

Mike Nelson begins a new series that tells you all you need to know to speak the same language as your Amiga. "Ah yes, but which one?", you demand. Well, this is where you can find out.

Thinking back to the good old days of home computing, the image readily appears of a spotty teenager huddled over

Day myself, in case the Maker was related to one, but there is much more potential hidden inside every Amiga than just playing games.

Users of more serious application software are the next rung up the evolutionary ladder, and as the bulk of Amiga owners are maturing, we are quite likely to see this group of artists, musicians, videographers or 3-D renderers get larger. However, even this use doesn't begin to explore the endless possibilities offered by actually writing your own programs. If the merest thought of telling your Amiga what to do fills you with instant negative vibes, then read on as we will show you that all is not necessarily as complicated as it may seem.

Taking things from the top, the power of the Amiga, its large memory and disk drive, allow you to use sophisticated software to help you "program". Purists may be uneasy with the idea that the likes of AmigaVision, Hyperbook and Cando are effectively programming languages, but that is ultimately what they are. They allow you to string commands for the computer together (a reasonable working definition of programming) using icons and mouse movements, rather than typing obscure words on the keyboard. This article will not describe these programs in any detail but will in-

ming languages available.

There is no need to be afraid of the Amiga technology - both the software and its hardware was designed to be as flexible, yet powerful as possible; the absolute mountain of public domain software bears testament to this. You too could be in on this very rewarding act with a bit of investment and effort. This article, and the subsequent ones in the series, should, therefore, point you to the best path to programming paradise.

BASICs

Most people will want to begin right away, and as the language used does not greatly affect the principles of programming, BASIC is as good a choice as any. For a start, a version is supplied with the Amiga (although the newer ones are devoid of BASIC), and it's not half bad in terms of the specification offered. However, Amiga-BASIC is perhaps not the best means of programming in this language, as even the most loyal of coders will testify that this particular implementation is terminally slow in execution. Part of the reason for this is that it's "interpreted" rather than "compiled". This jargon simply means that the English which you type in must be translated into something the Amiga can under-

Getting Started v

a 32K machine with a cassette deck and TV, trying desperately to squeeze the maximum amount of program into this massive amount of memory. How times have changed! The number of people, huddled over a keyboard, bashing in line after line of code from a magazine, is tiny compared to the thousands who spend hours blasting aliens to pieces, or belting the salt out of the latest kick boxer/Ninja Tortoise/Alien Scumbags, that are dreamt up by the professional programmers of today. There's nothing wrong with spraying a couple of rounds of electric death around a few alien earholes; heck, I've zapped so many sprites in my time I get edgy about Judgement

"There is no need to be afraid of the Amiga technology - both the software and its hardware was designed to be as flexible, yet powerful as possible."

stead concentrate on the more traditional means of communicating with the silicon.

The Amiga is a fully-featured 16/32-bit computer, meaning that although its processor is no longer regarded as state of the art, it is still capable of much greater things than the 8-bit machines our spotty teenager used to pore over. Instead of trying to cram as much machine code as possible into a puny memory, Amiga programmers have immeasurably more resources at their disposal. With these increased facilities goes the need for greater system support, and this requirement inevitably extends right across the full spectrum of program-

stand before anything actually gets done. The difference between compiling and interpreting lies in the "when" this translation occurs, and the latter is slow because every statement is taken and converted to machine language before it is executed. If the program consists of a loop which repeats 100 times, the translation of every statement in the loop must occur each invocation. A compiler will produce the machine language before attempting to run the code, so only one translation step is required, hence everything is much quicker.

There are certain benefits to both methods with execution speed being the main feature of compiling your

code. Interpreters allow for much more interaction from the programmer as the debug cycle is considerably shorter and, as with most things, the ideal world is a combination of both. Once you are happy with the soundness of your BASIC code, no matter how slow it runs, you simply get it compiled into machine language and away you

"AmigaBASIC is perhaps not the best means of programming in this language, as even the most loyal of coders will testify."

go. Hisoft produce one of the best AmigaBASIC compilers around as it is fully compatible with Commodore's language. Speed increases of 10-40 times are the average gain, but you may find even this too slow for writing fast graphics-based applications.

Why is BASIC so popular? The short answer is that BASIC is easy to learn (hence Beginners All Purpose Symbolic Instruction Code), and it gets many jobs done perfectly adequately. Among academics, BASIC has been projected as the vehicle for poor programming practices because it encouraged a fairly gung ho atti-

for writing fast graphics and in their compiled forms are capable of keeping a respectable number of aliens on the move, or in various states of disrepair. AMOS also has a module for handling 3D vector graphics games like Elite. Another dialect of BASIC is the new adventure programming language from Oxix called Visionary and this will be fully reviewed in the next issue.

C, Pascal and Assembler

Once you move away from BASIC, there are still several options for the would-be programmer, and they are by no means mutually exclusive. The reason for this is we are entering into the realms of genuine compiled languages such as C or Pascal (a more recent version of which is Modula-2,) and Assembler itself. These are more "professional", real world languages, which have the advantage of being much faster than BASIC and considerably more flexible as you are not so constrained by the limitations of the language definition; the operating system routines and hardware are far more accessible to the programmer. What does the programming on them involve?

Firstly, when it comes to C and Pascal, you write the program in much the same way as you would for BASIC,

pretty sparse it is too as the next step is writing in binary. The assembler takes the English and then generates the bytes that comprise the program, again via an object file so you can merge C and assembler code into the same program.

The big problem with both assembler and C is that debugging is very much harder. Because the code actually running has gone through a translation phase, there is no intrinsic mechanism for indicating what went wrong and the computer crashes, whereas BASIC has built-in error handling. That is not to say you have to get everything right first time as there are very sophisticated debugging tools for these lower level languages!

Another disadvantage is the initial cost involved in purchasing the assembler or compiler package, the system documentation, and the virtual necessity for a hard drive. Public domain libraries do offer simplified assemblers and C compilers, but it's really worth investing in commercial software once you've found your feet in the programming world.

I mentioned that the "real world" of programming was not about BASIC, but these days the workhorse of mainstream computing is C, closely followed in the PC world by Pascal. If you are thinking about a career in

ith Programming

tude to structured code with its dreaded "GOTO" statement. That criticism is not now as sustainable, because AmigaBASIC (which was written by Microsoft) does tend to promote much more acceptable standards with its lack of line numbers, fancy loop statements like "WHILE...WEND" and subprograms.

AmigaBASIC is a reasonable entry into programming, especially with Hisoft's compiler to overcome its serious lack of speed. There are other variations of BASIC, or dialects, for more specialised sorts of programming. Blitz Basic from MAST, or AMOS by Mandarin, are versions of BASIC which have been fine-tuned

and the compiler then uses your "source" code to generate a kind of intermediate "object" file. The format of this file is standardised by Commodore and so the output from all compilers, and assemblers, is read by a "linker" which welds all the bits together and builds the executable program that you run. From this, you can see it is perfectly feasible to produce programs that are hybrids from different languages.

By the way, if you are wondering about the difference between an assembler and compiler, it is relatively subtle in that assembler code is the lowest level of English possible (a bit like a certain solar newspaper) - and

"The assembler takes the English and then generates the bytes that comprise the program."

programming, you could do a lot worse than learning C, and programming the Amiga not at the heart of its fabulous graphics chips, but through the hundreds of operating system routines offered by Commodore, is excellent experience. The strict programming guidelines laid down in the ROM manuals regarding a multi-tasking machine are a sound introduction to the kind of discipline you would expect from Unix or similarly powered machines.

Assembler tends to be less important on mainframes, but the practice of breaking up a problem into successively smaller pieces before solving it with a program is the same no matter ►

MENTOR

Getting Started with Programming

C O N T I N U E D

what language you ultimately employ.

Personally, I avoid assembler as I find it unnecessary for the kind of programming I do. Code in which timing is critical is best written in assembler as are the fastest games; the operating system is just too slow on a bare 68000 to cope, but one day Amigas will be so fast that complex games with multiple scrolling areas, piles of sprites in hundreds of colours and 16-bit sound will all be a reality.

"Code in which timing is critical is best written in assembler as are the fastest games."

Other languages

The main programming languages for the Amiga have been described, but these are by no means the only options. For instance, Logo is an interesting way of starting off. It was designed very much with children in mind. Ostensibly a graphics language, Logo is best known for introducing

turtles into the classroom. These aren't the mutant Ninja type, but are more of a concept in that the programming involves giving this creature instructions like "move forward 40", "turn left 90 degrees". The computer would then plot the resulting movements on the screen (or move a robot over paper with a pen).

Increasingly important on the

"There is a real choice for would-be Amiga programmers and the options available are among the best on any personal computer."

Amiga these days is the new inclusion with 2.0, and that is ARexx. This is an Amiga version of the mainframe language Rexx which was ported over by William Hawes. This has many characteristics of BASIC in terms of its structure, but lacks many functions for performing specific jobs. Its real power comes from the fact that it is designed to communicate with other programs which have a kind of gateway to their various routines.

For instance, take The Art Department from ASDG which has an ARexx interface, and all the various loaders, operators and savers are available to an ARexx program. You could write some code which would go through an MS-DOS hard drive partition taking out a pile of PCX format graphics files,

passing them through ADPro which could be programmed to scale colourise and then save to an AmigaDOS drive in standard IFF format. This process, on an individual file-by-file basis would take hours on end, whereas if you got the Amiga to do it automatically, you could be doing something more constructive instead - even multitasking!

You should now be able to see that there is a real choice for would-be Amiga programmers and the options available are among the best on any personal computer. The very act of learning to solve problems using a computer is educational and will help you in other possible unrelated walks of life. People wishing to make computing their career could do a lot worse than starting off on their Amiga, and as well as being enormously satisfying, there is a potential to make the computer pay for that hard drive, accelerator...

Next Month Mike Nelson examines the whys and therefore of the language that some hate and some love! Basic

NEWSFILE

Picture This Desirable Residence. . .

A newly developed interactive Amiga system, MultiVision, has just been installed at a Danish estate agent for general public use. The system can be operated 24 hours, just by pushing 3 buttons - giving potential customers easy and quick access to information.

Potential customers can easily search for information about houses or flats, and people who want to sell can find information about buyers.

By using the 3 push buttons, the customer can quickly move through menus, where his or her individual wishes are defined: Type of housing, price range, number of rooms, site e.g. The user then received a survey of the suitable homes in high resolution pictures as well as with text on financial data.

Finally, the customer can choose to get further information about a particular house of interest and/or get a printed sales quotation; or input a contactable



Amiga driven housing boom?

telephone number.

If no one is operating the MultiVision system, it will automatically display a non-stop presentation of all the houses

and apartments in the database - alternating with picture commercials.

One of the secrets behind the system is the new digitizer from JCL Business Systems Limited: ColourPic Plus. The entire system is controlled by an Amiga 2000 with a harddisk.

The MultiVision system has been developed by the Danish company VHS Video Production. Director and developer Per Gerner told *AUI*, "It only shows that I was right when I thought that multimedia systems were generally too expensive. That's why I decided to develop a system which can be acquired by the ordinary shop owner."

Contact: VHS Video-Production, Reg. Commodoreforhandler, 4760 Vordingborg, Denmark. Tel: 55 34 04 05.

HiSoft Basic Version 2?

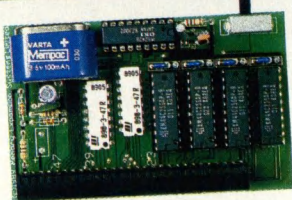
Due to a mix up with HiSoft's advertisement in *AUI* last month, many people called HiSoft HQ trying to buy Basic version 2. The advertisement was actually for an Atari ST magazine and went directly to our printer from another magazine which sent the wrong film.

Unlike some of our competitors - we have no rivals - we won't try to kick someone who is down or in trouble, as we won't disclose the name of the guilty magazine! HiSoft's Version 2 of Basic is out for the ST but the Amiga version is not due for release until the Summer.

However, HiSoft does have 2 new products for the Amiga. These are Devpac version 3 reviewed in this *AUI* and High Speed Pascal to be reviewed shortly.

Contact HiSoft on 0525 718181.

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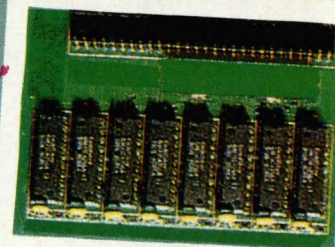
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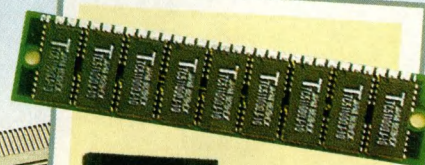
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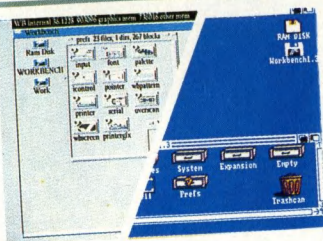
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Mega Chip 500

The Amiga is a very special piece of technology, for example, there is the speed at which it can animate objects. A standard A500 will give a speedy 386-based PC a shock or two when it comes to moving things around a fairly detailed screen.

Why should this be? The 68000 is nowhere near as fast as the Intel 80386 at number crunching, and the lowly 7.14 MHz clock speed doesn't even compare well with older 286 machines running at 12 or 16 MHz. The secret of the Amiga's blistering speed is not in the CPU, but in the custom chips or co-processors.

These are highly specialised chips which take over tasks that the CPU has to do on other machines. Because they only have one specific aim in life (e.g. drawing the display), and don't need to be worried about running a sort algorithm or operating disk drives, they are up to 10 times faster than the CPU at these dedicated jobs. This is the reason why the Amiga design, though it is over 6 years old, despite some major advances in technology has stood the test of time..

Ever since the Amiga was created confusion has abounded because of the different types of memory it has on board. This article should lift the shrouds of intrigue surrounding Amiga RAM, and also review a nice little board from Aquarian, more of which later. Mike Nelson reports.

memory chips meant this was soon extended to 1 Mb, but recently the A3000 has been equipped with a 2 Mb Super Agnus. The extra address lines mean that this chip is not pin for pin compatible with the earlier models so a small add on board is required. One such is the MegaA Chip board.

The MegAChip Board

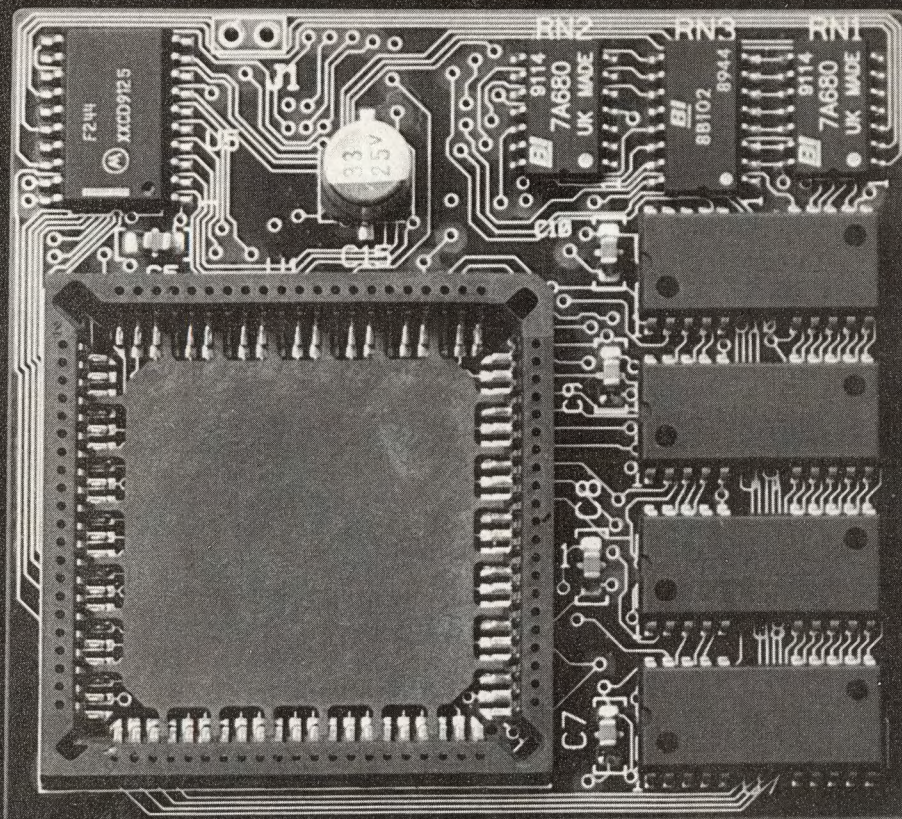
This £200 add-on is imported from DKB Software in the good ol' US of A by Aquarian, purveyors of PD software, and now it seems hardware too. The board is a tightly-packed two inch square affair with a socket that fits snugly into the old Agnus hole on the main mother board. Fitting the board requires no soldering, but considerable courage in either an A500 or a 2000. In the latter case, the

The secret of the Amiga's blistering speed is not in the CPU, but in the custom chips or co-processors.

How does this basic design fit in with the different types of memory on board the machine? The custom chip called Agnus needs independent access to the computer's RAM as this is where the data that defines the graphics for output, and also sound samples, is located.

The 68000 is capable of addressing up to 9 Mb of RAM under normal Amiga circumstances, but the Agnus does not have this range and is limited to an area known as CHIP memory. The add-on memory not accessible by the Agnus is known as FAST memory, mainly because the CPU has uninterrupted control over it without interference by the custom chips, but in practice it doesn't speed up the computer appreciably!

Originally, the Agnus chips in early Amiga 1000's and A500s could only see the first 512K of memory, no matter how much expansion was present. Advances in technology and a drop in the price of



entire disk drive and power assembly must be removed to locate the Agnus socket. That's where the fun starts as it is a new-fangled square chip which is stuck in tighter than a miser's wallet.

Although you don't need dynamite to pull it (unlike said wallet), if you don't have a special tool, the only recourse is to remove the motherboard, stick a screwdriver through the holes under the Agnus and tap it smartly with a hammer until it pops out. Sacrilege, I know, but it worked for me, although I would not like to make a habit of such a practice!

Once the Agnus is removed, you simply push the new board into place and connect a single jumper onto another nearby chip (the Gary), and re-assemble the machine. Powering up reveals you now have an extra 1 Mb of CHIP memory using the Avail command. Note that the extra memory, in addition to the new Agnus, is contained on the board so it is a genuine increase, rather than re-routing your existing memory. In fact, it means your lowly A500 can now have up to 10 Mb if you add another 8 Mb of FAST RAM.

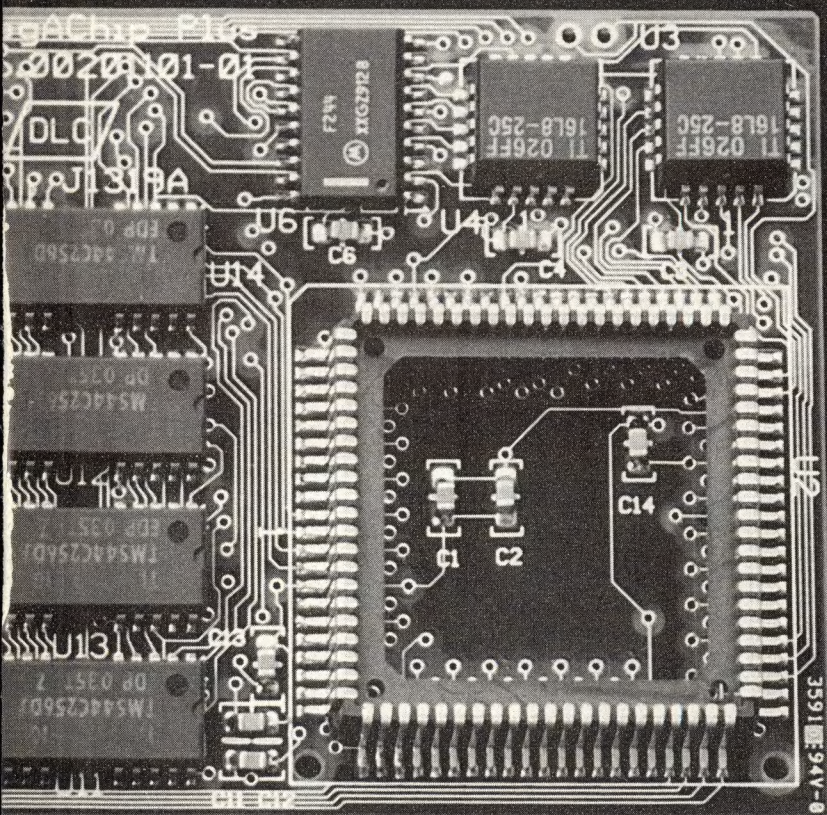
Compatibility Problems

From a compatibility point of view, users with older 512K machines (both 500s and 2000s) will have to do a bit more messing about cutting traces on the motherboard, and personally, I'd bail out at this point and get someone who knows that they're doing to get it sorted.

In fact, if you sort out the carriage costs, Aquarian will do all the necessities for the princely fee of absolutely nothing, getting your newly kitted Amiga back to you within a day of receiving it.

Anyway, I tested the MegAChip on my A2000 with a GVP 030 and had no real problems except the program to boot in 68000 mode failed miserably, but I suspect this is down to GVP's software, rather than the board. There should be very few problems with programs not running, but older games may be fazed by the extra memory, although I didn't find any.

*The Agnus chips
in early Amiga
1000's and A500s
could only see the
first 512K of
memory.*



A500 owners with 512K machines will need another half megabyte expansion in addition to the MegAChip, but this must be CHIP memory configurable, so check with the suppliers to see if yours is. Older 16-chip expansions are unlikely to be correct, but Aquarian can supply you with an alternative for £22 extra. Expansions that have jumpers onto the Gary are also likely to cause you problems, but DKB are apparently working on a way to fix this.

Readers of old will remember I reviewed the original 2000-only version and noted that it was a bigger board, obscuring the 68000 socket where accelerator cards like to sit. The new MegAChip should now work with CSA's Mega Midget Racer in both 500s and 2000s, but there are problems running the board with other trapdoor expansions which offer more than the usual 512K add on, so get in touch with Aquarian for full details.

Conclusion

What does having 2 Mb of CHIP memory mean? Is it worth the effort and cost? I think I'll sit on the fence with this one and recommend the board to people who are heavily into productivity software, multimedia and humongous graphics applications which generate "Not enough Chip memory" errors. Games players will find cheaper ways to expand their Amiga.

I find the board invaluable, especially when running under the 2.0 operating system, as I can set up my Workbench to be interlaced (where's that Multi-sync?) and increase the screen size to be 1000 pixels long. I then open ProPage on this screen and can extend its window so it displays all of a page at 100% magnification. I then use Autoscroll to move around the page without waiting for ProPage to update its display. You have to be there to appreciate it!

Multi-media is, by its very nature, very hungry for CHIP memory, and if you wanted to design huge presentations, then the MegAChip is really a must. Large samples and high resolution graphics, maybe with the Toaster (fat chance!), or DCTV (at last!), use vast amounts of CHIP RAM and so the extra is always handy.

In short, the MegAChip does its job fantastically well, but think carefully about your applications before shelling out on a relatively expensive product. Most of the cost is in the new Agnus chip as Commodore don't really like the idea of these boards, but the extra 1 Mb of RAM would account for about half the cost, anyway.

Price: £198.00

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MENTOR

The final part of the exclusive *AUI* A to Z Guide to the Amiga. John Kennedy and the *AUI* team fulfill a life's ambition in defining the Amiga Universe to their own satisfaction.

Part 3

S to Z

Screen

When you look at something displayed by your Amiga, you're looking at a Screen. That may seem pretty darn obvious, but I'm not talking about the piece of X-ray emitting glass and plastic sitting on your desk. I'm talking about the software structure that lives in the Amiga's operating system. A SCREEN is the most basic graphics primitive, and determines the Screen mode, the colours, the resolution and where the display appears on the Screen. All WINDOWS inherit their graphics modes from Screens. Several Screens may exist in memory at once, and by using the left Amiga key and M and N you can view them all.

Scribble

Not by any means the best but probably the most widely used of word processors on the Amiga. Created by Microsystems right back in the A1000 era, it is now in the Platinum version. No doubt ProText and Wordperfect have the professional vote but for the ordinary user, the old stager Scribble is still as simple, user friendly and cheap as they make 'em. And they don't make 'em like that any more...

SuperHiRes

Another graphics mode - this one only available with the latest version of the Denise chip. SuperHiRes manages to double the standard HiRes horizontal resolution to a whopping 1280 pixels across. It will work with a standard monitor or television: but you'll need good eyesight to be able to make anything out. SuperHiRes will be of most use to DTP and DTV folks. As way of com-

parison, a TV standard colour image only has a resolution of about 300 pixels across.

SetMap

As you know, the Amiga is an international machine. Rather than manufacture a different computer for different countries, Commodore have opted for a software solution. Each switch on the keyboard goes through a software "filter" which re-maps the necessary. By supplying a suitable keymap and popping the relevant letters onto the keyboard switches, a standard Amiga can make sense to American, British, French, Dutch and Icelandic typists to name only a few. If your computer seems to produce strange characters when you press a key (for example, a Hash system instead of a Pound sterling, quotation marks instead of At signs) you will need to alter the keymap. A special program called SetMap lives in the SYSTEM drawer to let you do this. Open a SHELL on your Workbench, and type:

SetMap gb

and your keyboard will think it's British. You can see what other keymaps are available by typing:

```
dir devs:kevmmaps
```

Serial

Serial is the opposite to Parallel, in that information is sent a BIT at a time, in a long queue. The Serial port on the back of your Amiga can be connected to serial printers, MODEMS and even other Amiga's for two player games. The speed of serial data transfer is measured in

BAUD, such that 1200 Baud means 1200 bits per second. This works out at about 120 characters a second, as extra bits (Start, Stop and Parity) are usually transmitted with the 8 data bits to keep everything working properly. The standard serial communication system used by the Amiga is RS232. MIDI also uses serial data, although not at RS232 levels so an interface is needed to convert the Amiga serial port to a MIDI port. Here's a quick question for you to see if you've been paying attention: since parallel data transfer is obviously faster than serial data (having 7 more wires), why don't MODEMs use parallel ports? FIGURE xx.

Shell

Almost the same as a CLI - but better. A Shell is another Command Line Interface where you can type exciting commands like "DIR", "INFO" and "FORMAT drive DH0: name HaHaPat QUICK NOICONS". N.B, Pat please don't type the last one or you'll be sorry. You can add your own commands to a shell by using the ALIAS command thus:

alias Plop Dir

```

0  mingashell
1  text
2  3.Ram Disk> list
3  prog1.doc 2 -rw-r--r-- Today 16:20:86
4  prog1.bak 2 -rw-r--r-- Today 16:20:85
5  prog2.doc 2 -rw-r--r-- Today 16:22:35
6  prog2.doc 2 -rw-r--r-- Today 16:22:35
7  prog1.doc 2 -rw-r--r-- Today 16:22:46
8  text 8194 -rw-r--r-- Today 16:22:47
9  dir 1 -rw-r--r-- Today 16:22:47
10 clipboards 0 -r--r--r-- Today 16:20:41
11 7 files 3 directories - 20 blocks used
12 3.Ram Disk> list prog1.doc
13 prog1.doc 2 -rw-r--r-- Today 16:22:30
14 prog1.doc 2 -rw-r--r-- Today 16:22:32
15 prog2.doc 2 -rw-r--r-- Today 16:22:46
16 3 files 8 blocks used
17 3.Ram Disk> list prog1.doc
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19 prog1.doc 2 -rw-r--r-- Today 16:20:30
20 prog1.doc 2 -rw-r--r-- Today 16:20:30
21 prog2.doc 2 -rw-r--r-- Today 16:22:32
22 prog2.doc 2 -rw-r--r-- Today 16:22:46
23 5 files - 10 blocks used
24 prog1.bak 2 -rw-r--r-- Today 16:20:85
25 2 files 2 blocks used
26 3.Ram Disk>

```

'plop' can be the same as 'dir' in a shell

MENTOR

A-Z

C O N T I N U E D

Now typing "plop" achieves the same as "dir". Put these aliases in the file called Shell-startup in the S drawer to make them permanent.

Startup Sequence

When your Amiga comes to life the first thing it tries to do is a load a disk (floppy or hard). When it manages this, unless the disk is of an odd format, AmigaDOS looks for a file called Startup-sequence in the directory. The startup sequence is a list of CLI-commands which perform various duties such as setting the clock, setting the disk drive buffers and so forth. You can edit the startup sequence and add your own commands if you like, by using any text editor. Even the standard ED will do:

ED s:startup-sequence

Probably the easiest thing to do is to add your own message by altering the text following the Echo statement.

On Workbench 2 machines, a file called User-startup exists for you to alter to include your commands. This will stop you from accidentally mucking up your original startup sequence so badly that your machine will sulk.

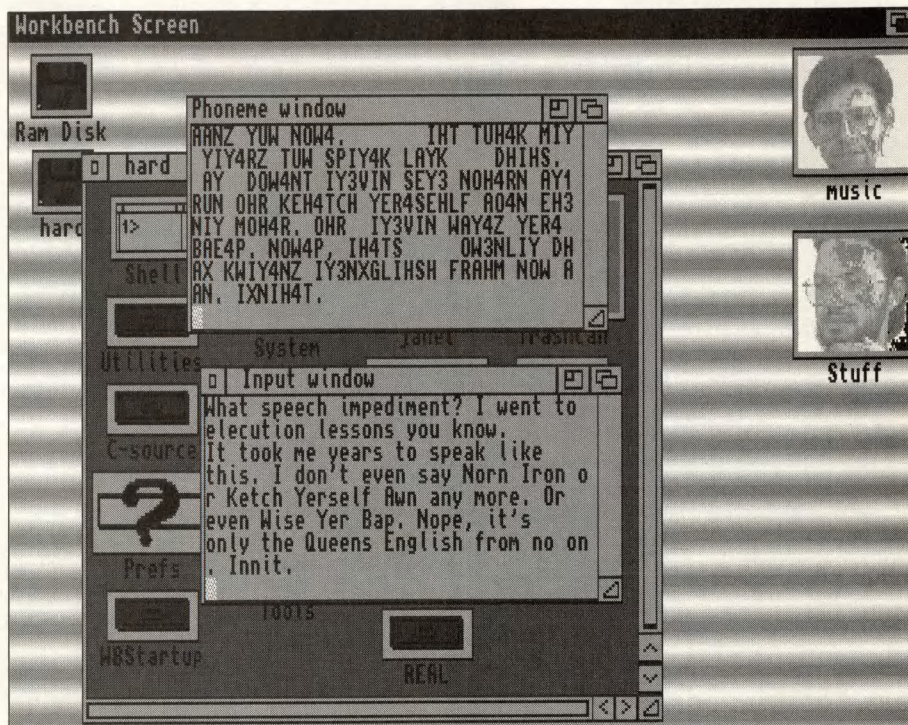
Kickstart 2 owners can choose whether or not to execute the startup sequence by using the "secret" startup screen available by holding down both mouse buttons on reset.

Sizing Gadget

The sizing gadget lives in the border of your AmigaDos window. You can change the size of the window by clicking on it and dragging it with the left mouse button held down. Endless fun! You might think it's obvious, but try the same sort of thing on a PC running Windows or GEM and you soon find the Amiga system is almost uniquely more advanced. Some Graphical User Interfaces (not AmigaDos) won't let you have overlapping Windows!

Snapshot

You can speed hours arranging all your favourite icons in a special way, and then discovering that whenever you re-boot they have all gone back to the way they were before. The secret is to select the icons (using SELECT ALL from Workbench2 pull-down menu, or highlight them all with a single mouse click under 1.3) and then choose SNAPSHOT from the pull-down menu. Make sure your disk is Write-enabled for this to have any effect.



The Amiga can tell John Kennedy his taste in Amiga magazines is going down hill fast.

Speech

It's true! Your Amiga can talk to you - well, almost. The easiest way to try the speech synth out this is to run the SAY program in the UTILITIES drawer. Assuming that the computer is wired for sound, you'll hear a dalek-like conversion of whatever prose you enter. You might scoff (scoff, scoff) but achieving this level of speech generation in the past has required all sorts of add-on boards and chips. If you're wondering why the speech in some games and demos sounds a lot better, it's because the demo/game voice is a digital SAMPLE taken of a real person talking - the Amiga uses small packets of words stitched together in-

stead. There are two benefit to this techniques: (1) the Amiga doesn't need buckets of memory to store all the possible words and (2) it's incredibly flexible. For example, from a SHELL type:

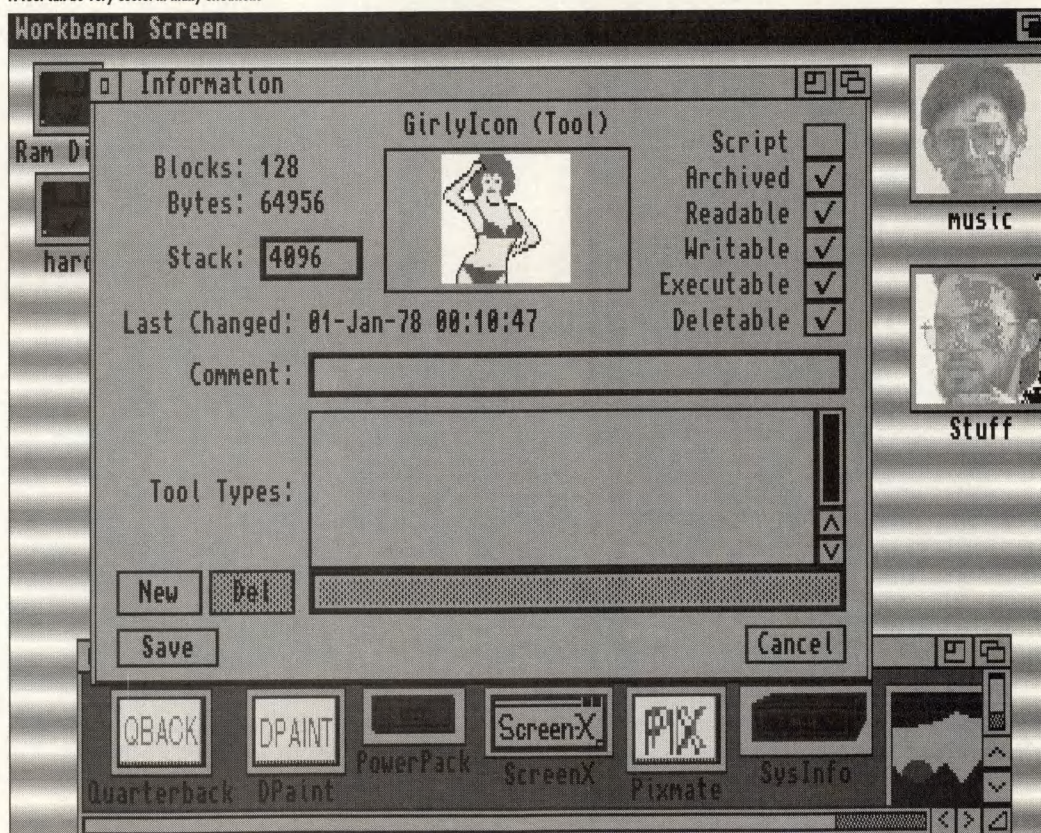
dir > speak:

and your disk's contents will be read to you.

Tool (See illustration below)

In Amiga-speak, a Tools is a program which you can use to produce or achieve something (called a Project). To check if an icon is a tool or not, highlight it with a single mouse click and select INFO from the Workbench pull-down menu.

A tool can be very useful in many situations



Tramiel - Sam

Originally, with major shareholder Irving Gould, ran Commodore when it was still selling typewriters and calculators out of Canada. After a falling out - rumoured to be over whether Tramiel's sons could take senior jobs in the business - Tramiel left and bought Atari from Warner Bros. Then the plot thickens because the founders of Amiga were running out of money and went to Tramiel for financial support. He lent them some serious cash and supposedly took an option on buying Amiga. But he was dished by the Amiga guys changing their minds - Tramiel was no easy dealer - and going to Commodore who snapped up the Amiga. The rest is history or at least not entirely...for Tramiel is believed to have sued Commodore and got some substantial recompense to repay his loan to Amiga and having missed out on getting the machine we all love. So what did he do instead? He launched the ST. No, Sam, you can't win them all...

Wellington - Gail

Among other achievements this popular lady has stayed in and with Commodore through all its ups, downs, sideways movements and mess arounds for more than ten years in the U.K. and U.S.A. She has played a leading role in the worldwide development of Amiga software worldwide and, in recent years, has been in a key position of influence in the creation of the CDTV.

Wildcards (picture)

Imagine you are using the CLI and have a load of files to delete, called PLOP1.TXT, PLOP2.TXT, PLOP3.TXT and so on. You can delete them all in one go if you type the following:

```
delete plop?.txt
```

because the ? is a wildcard character that can stand for any other character. You can use more than one ? if you wish, or alternatively use a preceding hash to stand for any number of question marks. This is why

```
list #?  
is exactly the same as  
list
```

Window

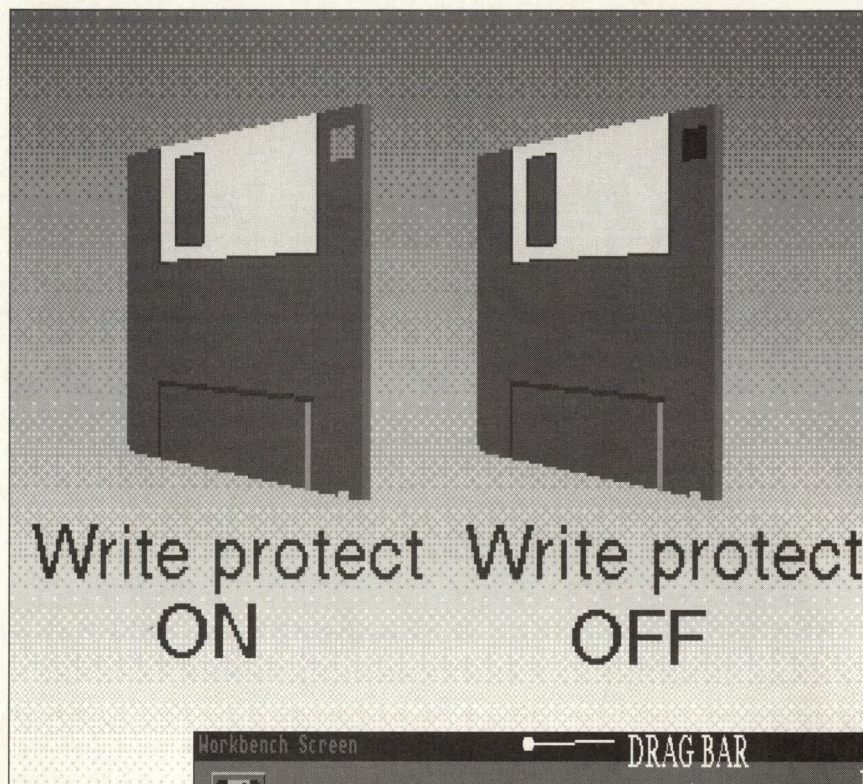
A Window sits on a SCREEN and is your way or interacting with the Amiga. If a program follows standard AmigaDos rules (or uses Intuition correctly to be more precise) then the Windows will have title bars, borders and gadgets. You can resize windows and shuffle them around the screen.

Wordperfect

The most successful word processing program in the world. Largely known for its MSDOS version, it was considered the stamp of business credibility when it appeared on the Amiga. The recent 5.0

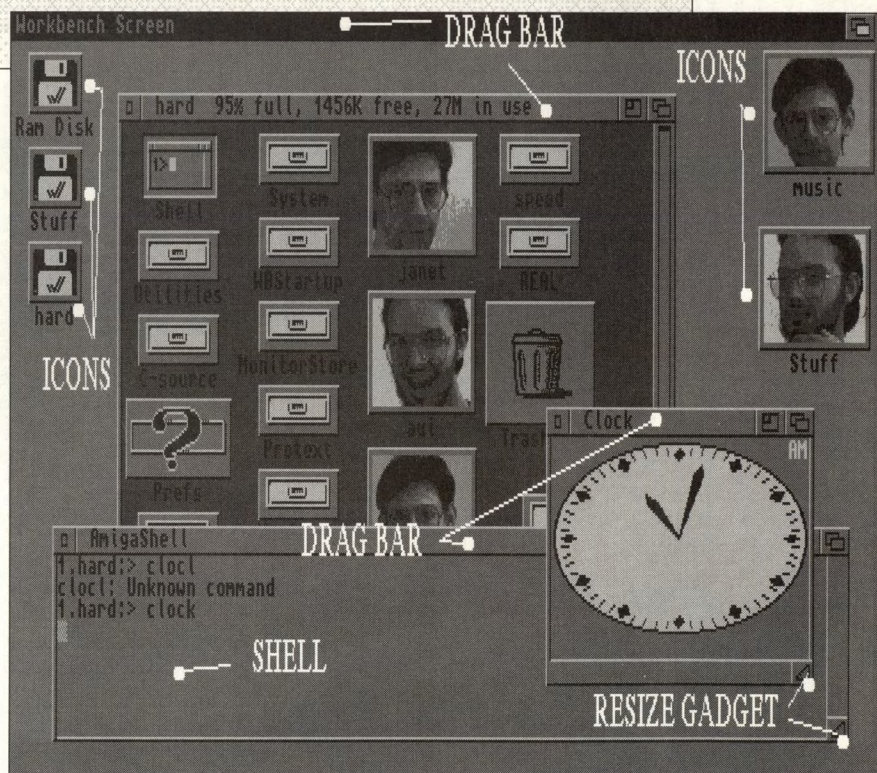
version was announced even launched last Autumn for the Amiga. Rumours are now though that the Wordperfect people have got cold feet and might not be supporting the Amiga in future. It may not worry you but you can bet that Commodore isn't very happy about it.

Right on virus protection



Write protect tab

When the write protect tab is clicked back to show a hole through the disk it becomes impossible - repeat, impossible - to record or change data on that particular floppy. It's one of the best anti-virus devices ever.



Upgrade your Workbench or your face

Workbench

Sometimes it's Orange, White, Black and Blue. Sometimes it's Grey. It's always the best multitasking graphical user interface on any personal computer (with the possible exception of the NeXT). Workbench 2 is the latest (grey) release, and all 1.3 owners should think about getting the upgrade kit.

Zoom

Workbench 2 window's have Zoom gadgets which will expand or contract the current WINDOW. It's handy enough, although Intuition always seems to pick the size you're least likely to want.

Polynomial Expressions *Part II*

Paul Overaa recounts the second part of this tutorial on an arc of key programming interest.

We saw last month that adopting list-based structures to represent polynomial type expressions can save a lot of space relative to the equivalent array based form (because only terms with non-zero coefficients need be stored). The space difference in some cases can be enormous and the equation quoted last month was a good example...

$$X^{2000} + 2x^{14000}$$

Despite the fact that only two terms are present, this equation would require the allocation of space for fourteen thousand coefficients when using an array style representation. The list-based equivalent would of course only require us to allocate just TWO terms!

The only real disadvantage of the list approach is that, despite the fact that the standard type of add-to or remove-from list operations are easy enough to program, the programming of the maths operations themselves can get a little tricky.

As an illustration I'll take the easiest possible example and sketch out a routine to add two (ascendingly ordered) polynomial-term lists together. The extra complexity, relative to the one line array based example given last month, is due to three things: Firstly only terms of identical power may be added together and this means that it is necessary to continually compare the powers of the terms being dealt with. It's easily done using this type of conditional testing...

```
if(a->power==b->power)
```

Is the fact that the two terms are of identical power enough to enable us to add the coefficients together and create a new term? The short answer is NO! Supposing, for instance, that one coefficient had a value of -2 and the other a value of

+2. Despite the fact that both terms had non-zero coefficients the resultant term, since it WOULD have a non-zero coefficient, ought not to be created! The bottom line is that even when two appropriate terms are found a composite term must only be created IF their sum is non-zero. This being so we can use this type of coding scheme...

```
sum=a->coefficient+b->coefficient; /* add terms */
```

```
if(sum) r=insert_term(sum, a->power, r);  
/* create if non-zero */
```

That deals with the mathematical snags but leaves us with one remaining practical nasty: As 'result nodes' are prepared we would be dynamically allocating memory - the bad news is that because the allocation procedure could fail at any time during the creation of the new list and this is something which we must also take into account.

Putting It All Together

The basic requirements for list-based polynomial addition are then easy to establish: The coefficients of terms of like powers are added together and a new term created if the sum is non-zero. Irrespective of whether this resultant term is created or not we will need to read two new terms.

The alternative situation, namely that the powers of the terms being compared were not found to be equal is easier to deal with - we add to the results list a copy of the term with the lowest power and then replace that term with another one from the list which had provided the new results entry.

The above approach can continue until it becomes necessary to stop the process and here two terminal conditions can be recognized: Firstly we should stop when we find we are about to add two sentinel power values together, ie two list tails. Secondly, we should make sure that a memory allocation error would halt the process.

The following piece of code shows a typical polynomial addition scheme implemented using the C language. The routine accepts pointers to two ORDERED polynomial lists (a and b) and a further pointer to an empty results list. It then creates nodes representing the polynomial sum placing them in the results

list as it does so. The value returned under non-error conditions is a pointer to the last inserted results list node and the main purpose of this value is as an error indicator - if the returned pointer is NULL then the insert_node() routine has failed to allocate memory for a new node. Anyway that's enough of the underlying theory, here is the routine itself...

```
struct term *add_terms(struct term *a,  
struct term *b, struct term *r)  
{  
    double sum;  
    do {  
        if(a->power==b->power)  
        {  
            sum=a->coefficient+b->coefficient;  
            if(sum) r=insert_term(sum, a->power, r);  
            a=a->next;  
            b=b->next;  
        }  
        else {  
            if(a->power<b->power)  
            {  
                r=insert_term(a->coefficient,  
a->power,r);  
                a=a->next;  
            }  
            else {  
                r=insert_term(b->coefficient,  
b->power,r);  
                b=b->next;  
            }  
        }  
    }while (  
        (!((a->power==SENTINEL  
_VALUE)&&(b->power==SENTINEL  
_VALUE))))  
        &&  
        r  
        );  
    return(r);  
}
```

Although it might not be immediately obvious from the code, the terminal sentinel power value (higher than any real data value) did enable a number of code simplifications to be made. You will, incidentally, come across sentinel-based tricks in a great many list-orientated programs!

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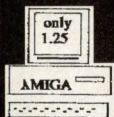
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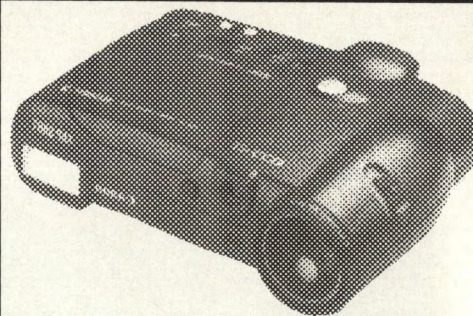
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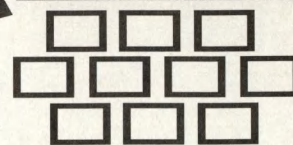


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Andy Eskelson searches out the answers to your tough technical questions

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When writing to Amiga Answers, please include as much information as possible about your system, and about which software/hardware you are running.

This will help to determine what your problem might be and its solution!

Dear AUI,

Please could you assist me in making a few decisions by offering your advice on the subject.

I have at present a very vanilla A500 with absolutely no add-ons what so ever. Following the usual advice regarding expansion I started looking at RAM first, but then I realised that all of this extra hardware except monitor and printer would be useless when I upgrade to an Amiga 2000 or 3000. So why spend all this money which I'll never get back when I come to sell it. So could you answer a few questions please.

1. I already have a Star LC24-200 Colour printer which I know would be compatible with the A2000/3000. What other peripherals are, especially for the A3000.

2. I notice Diamond from London offer part exchange a 1Mb A500 for an A2000 for £350. Can this be right? or is it a misprint? Sounds cheap to me when A1500's are selling for £600-700.

3. Amiga 3000's seem to be pretty mysterious, with no magazine having done a full review on it, or its software Why not?. If I could afford one, (a big IF at the moment), do you thing that this could be used as a home computer?. If everyone says that A500's can do all that the 2000 can do, then why the hell did Commodore make the damm machine in the first place? What kind of people are the A3000's meant to be for?.

4. I would use an Amiga to do the following most likely:

Word processing, Programming (C and Assembler) DTP, running a PD library, Comms (maybe), Ray Tracing and playing games.

Therefore:

Which computer would you suggest (bearing in mind my upgrade point I made earlier? I thought a 2000 or a 3000

What size hard disk?

How much memory I thought 4 Mb?

5. Is a multisync monitor a worthwhile purchase or is it a luxury?

6. Is a BBS difficult to set up and run?

7. Are any companies creating their software to run on A3000's eg DPaint Protext or games etc.

That's all! Hope this is not too much to ask for, but it is causing me a lot of problems in my decision making. Keep up the good work.

**Leslie Fowler
Tyne and Wear**

Dear Leslie,

Quite a few devices could be A3000 compatible, External disk drives, SCSI devices, genlocks (check first!) scanners, modems, and so on.

Be careful of trade in offers, sometimes you are getting a reconditioned machine. Phone and enquire first.

The A3000 has been covered fairly well, however it has been a gradual thing rather than a one off hit. Remember that the 2000 and the 3000 are fairly compatible machines, especially when you drop the 68030 card into the A2000. The A3000 uses Workbench 2 and the Enhanced Chip Set(ECS) and a 68030 processor.

The A500 was never intended to be expanded in the same way as the 2000. 99% of the A500 expansion is from third party suppliers. The question that I would ask, is what will happen if CBM change their manufacturing process, say by going to surface mount chips rather than socketed chips. That could put the mockers on quite a few add on units. The A2000 is designed with expansion in mind, hence the big box.

The A3000 has less expansion, but as it has most of the add on units fitted as standard, you don't really need a vast number of expansion slots.

Most computers can be used as home computers, it depends on how you define the term. I know of people who have set up PDP 11 computers at home and got them working!. The A3000 can be used at home in the same way as the A2000, or a PC clone. A3000s are meant for anyone

who wants one. I don't believe computers are built for any one market or person.

As for your requirements, If you can, go for the A3000, but see the comments about compatibility problems below. The main reason for the A3000 is your ray tracing requirements. The 030 and the co-processor will make a vast difference to that aspect, as it will to the DTP requirement.

Hard disk size.. well, my normal reply is as big as possible. I don't see any reason to change that advice, except to think about doubling it! Graphic images eat up disk space!

Memory, again as much as possible. For the A3000 4Mb is a bit low. Go up to at least 6Mb or more. I have the full 9Mb in my 2000 and that seems to do me quite well at the moment.

Multisync monitors are a must as far as I am concerned. I use two A2000 machines. The one with the flicker fixer and the multisync is so much more comfortable to use. There are no visible scan lines and there is no flicker, you also get more lines of text on the screen.

BBS systems are not too difficult to set up but they require a lot of time to maintain.

Most companies have already produced software to run on the A3000 and about 90% of the major applications will run quite nicely as they stand. The A3000 can drop down to WB1.3 without too much bother. The biggest problems are with the games. There are some games that will not run on the 3000. Mainly due to the 68030 chip (the 2000 fitted with a CBM 2630 card can drop back to the 68000 on bootup, but the A3000 does not have a 68000 to drop back to. As time progresses most software should work on the 3000 as well as it does on the 2000.

Dear AUI,

I purchased my A500 with 0.5 Mb upgrade about two months ago. I have never owned a computer before this and therefore I have been struggling a little to sort out how to operate it. My intention is to use it to hold a database with about 300 records, and as a wordprocessor. I have quickly realised what a powerful tool I have bought and I expect as time goes on I will find countless other

uses too.

However, at the moment I seem to have a problem that is causing me quite a few headaches, and I am writing in the hope that you will be able to help me sort it out.

I cannot seem to get the diskcopy programme to work. It worked fine at first using the internal drive, the external drive and any combination of the two, but now it has started refusing to cooperate. Whether I try to run it from the Workbench system drawer or from the shell or the CLI the result is always the same. It reads OK and Writes OK but refuses to verify. When attempting to verify the first cylinder it tells me: Error on TO disk. Verify Error, Diskcopy abandoned.

If I persist I get a note either saying Checksum error 1082 or that the disk I am trying to copy has a read write error and I should use diskdoctor program to correct it. I then use the diskdoctor program and attempt the copy again with the same results. Sometimes if my Amiga is feeling really uncooperative it then goes to sleep and refuses all my attempts to wake it up except by resetting. It either faces me with a blue screen which is very pretty but also very annoying. As far as I can tell everything else is working perfectly. I would be really obliged if you could tell me what is wrong. Have I caught a virus or is it that I am doing something wrong.

**Peter Cross
Clwyd.**

Dear Peter,

A very odd problem. You could have a virus, have you put any dubious disks into your drive? Use something like Virus Checker V5.33 or better to check out your system. (We have supplied this Virus Checker on the AUI Coverdisk)

Can you FORMAT (Initialize) a disk? If not you might have a batch of dud disks (that can sometimes happen). Try to reformat an old disk that will prove that point.

It might be that your power supply is a little low on power. Try unplugging the extra drive or extra ram and see if that helps matters. If it does you will have to consider getting a supply that is a bit bigger. (There are several suppliers)

Make sure that you are using good ►

AMIGA ANSWERS

C O N T I N U E D

◀ *disks, it is possible to get dud disks, especially some of the very cheap types. Try a disk or two from a different batch and see what happens.*

The other thing to note is that Diskcopy will not copy protected software, so that might also be a part of your problem. Try to avoid Diskdoctor as that is a rather destructive program. Fixdisk or something like that is quite a bit better.

Dear AUI,

I am writing to you for advice on the usage of Lattice C (5.10). I noted your comment in your Amiga Answers page (Oct 91) in which you said that you answer all letters without exception, a stance which I find thoroughly laudable, though I suspect you will now be getting a huge mailbag and may regret the claim.

I am new to C and have been working my way through college library books and the Anders Bjerin disk based manual. When I try to make changes to some of Anders' listings, I get an irritating error message during the linking stage even though it compiles OK. The error message asks me to define a value for a stub. I can't find any clear definition for what a stub is or what a stub does or for what sort of value it expects to be defined with.

The error message looks like:-

UNDEFINED SYMBOLS FIRST REFERENCED

screen intuimenu.o

Enter a define value for _screen (default _stub):

I enclose an example of a listing which produces this error message. I am probably doing something wrong that can be very easily corrected if I am pointed in the right direction. I must be constantly making the same kind of mistake because this error message appears frequently and is the only one that I have encountered that I have not been able to decipher.

It is so frustrating to feel that I am getting close to being able to really use C but am unable to overcome this one clanger. If I enter a number for the value, the linker complains and prompts for another try. If I enter '_stub' the linking completes successfully but when I try to run it, I get a system requester which says ** UNDEFINED STUB ROUTINE CALLED **

The listing is basically one of those from Anders examples, altered only in that I have renamed his MAIN()

and then tried to call the renamed function through a switch/case from an external main. My reason for doing this is to try to isolate the example as a single function. I want a screen function, a window function, a menu function etc. which are clearly separated in the listing, otherwise the structure declarations seem to get very cluttered and unreadable when joined together.

**John Hanna
Southgate**

Dear John.

This problem throws everyone!..

Translation of the error message...

Oi!!! you out there! what do you think I am, a mind reader ????

where the ruddy hell this is function called screen!

Tell me where it lives or I'll go into a sulk.

Put it another way, you forgot to declare the function screen(); at the start of your program. I would expect your code to have a line in it such as:

```
void screen();
void anotherfunction();
.
.
etc.
```

Stubs... another silly problem. I quote from the SAS (Lattice) manual, 'The stub function is the default routine resolved by blink for routines not found in libraries.

In other words its a debugging aid, have a look on page L244 of your manuals.

Thanks for your comments, so far the mailbag is not too bad, I seem to be able to process it without too many problems. I have enclosed an example listing of my own in your SAE so that you can get the idea of what I mean.

The real bible for C programming is 'The C Programming Language' by Kernighan and Richie ISBN 0-13-110362-8, this is the latest ANSI C edition. I also found that Abacus Amiga C for Beginners was helpful, providing that you work through it!

Dear AUI,

I have a couple of small problems which I hope you can help to solve. Firstly let me explain my system; I have a B2000 which is fitted with twin drives, NEC 114Mb hard drive, GVP 33Mhz Combi board, populated to 12Mb and an XT Bridgeboard.

The problem I have experienced is with the Workbench. The duplicate function does not seem to work, in that it crashed the computer and fails to duplicate drawers etc. One other problem is with the XT bridgeboard; that is when the board is reset using CTL-ALT-DEL the computer waits for some time while it checks through drive A and B before it auto starts by the hard disk. Should this happen and can it be avoided? The last problem concerns the Combi accelerator board, in that when I use the Boot68000 utility a message comes up saying that Boot68000 needs a GVP board and the computer appears to boot up using the 68030. The top line of the Workbench shows 12Mb. I would have thought that this would have only been about 1Mb, the size of the fat Agnus as the expanded memory would not be recognised. Is this right and if so any ideas.

Finally there seems to be a problem in selling unwanted computer equipment. Stores are not interested in part exchange and normal local advertising does not yield results. Is it not possible to include a readers' sales column? This would reach the right audience and would be a lot of use to Amiga Addicts.

**A.E. Wigley
Prostow**

Dear A.E. Wigley,

The duplicate problem is a REAL problem, it is a known BUG in Workbench and quite frankly it is well and truly broken. The new WB2.0 will cure this. The workaround is to drag a drawer into RAM: and rename it then drag it back.

I do not think that the Bridgeboard should check the Amiga drives, or do you have yet more drives attached to the Bridgeboard? PCs do check the floppies before the hard drive, so that is normal.

The GVP Combi problem sounds like you need a different version of the boot program. The 12 Megs of ram might appear in the Amiga's memory map, but as the Amiga can only Autoconfig 9Megs I would think that your 11Megs is located on the 68030 bus and not an autoconfig system.

Try removing your Bridgeboard then running the program. The Bridgeboard takes up 2Megs of the Autoconfig memory space, and this just might be related to your problem, but it is unlikely. You really must contact GVP - or Silica Shop, their representatives in the U.K. Telephone 081 309 1111, for some product specific advice and possibly an upgraded boot program.

Readers Adverts, I have not printed your list of equipment as it will be quite a while for this to filter through the system. (I only get two pages a month!) I cannot say yes or no

on that one, that's a decision for the Editor. (We'll give it some thought, that's a promise. ED)

Dear AUI,

I am in great need of advice. I am leading a mountaineering expedition to the Indian Himalaya in June Next year, and in order to raise money via sponsorship, we are going to film and then produce a video documentary of the reconnaissance this November. My video editing ideas were quite simple until I chanced upon the world of video titles and now I am at a loss as to which direction to turn. Clearly the Amiga is the computer for the job, the video and camcorder magazines advertise various packages purporting to do suit my needs. But having read **AUI** I'm not sure which computer size I need. Apparently I need a Tolkienesque device called a Genlock-some say a Rendale is good and then some don't, and then I need Deluxe Paint 3 but it might be number 4 with HAM (what is IFF?) and I also need a pro-titler or something similar, a Hi-res monitor and a 20 zillion memory expansion splange valve etc.

Simply all I want to do is string together various shots with sound tracks and overdubs, (this much I can do) and in the appropriate places add titles and such like. On a more complicated scale, I would like to place graphics in specific places on the overlay, such as positioning names under the expedition members in a group shot or adding a line up a shot of a mountain to show a possible route. Also I would like to produce a map with an animated line showing our intended route and goals or if possible, produce a 3D map (nothing too complicated) to emphasise peaks and valleys. Can Race Trace do this and will it work with video? Which is better DP 4 or DP 3 and how do I obtain goods from America?

As I am sure you will appreciate, in typical expedition style funds are low (having financed the reconnaissance) so my expenditure is limited. Perhaps there is someone based in London with the necessary kit who would like to promote a British Youth expedition (25 is young!) On a final note, congratulations on your reply to Dave Firman. "Play the white man" and other such phrases should not have any place in society today.

**T.Pinnell
8 Johnston Terrace
Cricklewood
NW2 6QJ**

Dear T.Pinnell,

Firstly good luck and a safe return to you and your expedition. Your requirements are fairly simple, but it will depend on the quality that you need. The general advice is as big

and as powerful as possible when it comes to graphics processing. **AUI** coverdisk number 1 should have given you a taste of a titler program.

Genlocks: A device that allows you to overlay a computer image onto another image from another device (such as a VCR) and feed the combined image to another device (such as another VCR). The trick is to prevent the two pictures from breaking up into a right mess. That's the function of a genlock.

Any graphics package will do what you want within reason. HAM gives more colours, but it is a bit slower to work with. Other packages working in 16 or 32 colours at one time are normally good enough. Really use whatever package you feel most comfortable with.

For titles a few sets of good fonts are required, bear this in mind.

IFF: Interchange File Format, a way of saving data to disk in a STANDARD form. This allows many different packages to read the data. So you could capture an image with a scanner then read it into a graphics package to add a few lines etc.

I have not used Race Trace so I cannot comment on it. If you want information on it contact Alternative Image, Telephone 0533 440041.

Ordering goods from America is fairly easy, just phone them up and order via Visa or other credit card. Remember that you may have to pay import duty and vat.

The very best advice I could give is **GO AND SEE SOME SYSTEMS IN ACTION.** Do you ever practice in Scotland? The Amiga Centre Scotland is very well versed with frame stores, genlocks etc and a chat with them would not go amiss.

As for the "play the white man" comment, sorry I can't take credit for that reply, that was Bud's doing. (Write to Reply **AUI** Oct 91) I would never have produced a reply as good as Bud's, (my tact and diplomacy are of the sledgehammer variety!)

Dear AUI,

I bought a new Amiga A500 plus complete with a further 500 whatever last week, plus a Cannon BJ-10 ex bubble Jet printer. So far I am still reading the manuals and have progressed a little towards getting to understand the computer. I bought the computer mainly to use as a word processor, and I have been loaned a copy of Kindwords just to see if this program is suitable. I am having some joy with this but on the printout of which this is one, I am constantly getting odd letters and numbers in the margin. Can you advise me how to get rid of these.

According to Deluxe Paint III, I should also be able to print but so far I have not even produce one dot. Could you help with this problem as

well?

I also bought a copy of your magazine because it had a free game attached to it. Namely **AUI** userdisk Number 6 I have tried and tried to get further than :

Software Failure. Press left mouse button to continue.

I am returning this disk and ask you to replace it if possible with one that does work or advise me where I am going wrong.

**B.E.Chadwick
Birmingham**

Dear B.E.Chadwick.

You have a few problems, one of which is that you are not at all familiar with the Amiga system, however that will come with time.

You might have one of the very new A500 plus machines that is fitted with the new electronics and the new Workbench. Which version of Workbench do you have? Is it 2.0 or 1.3, the new version comes up in a cool gray, white, black and light blue. The 1.3 version comes up blue, orange, white and black. If you have one of the new Amigas then that might be the reason that the game crashed. Was it the puzzle game? That's the only one I can find on Userdisk number 6. I have just tried it out without any problems.

Your other problems are one and the same. You do not have the correct printer driver installed. Have a careful look at the printer installation in the manual. It has changed quite a bit in Workbench 2.0 You may have to get hold of the correct printer driver program in order to get your printer working.

It is also worth looking in the printer manual, sometimes printers can be switched to emulate another printer, normally an Epson or IBM type. You might have a driver for that rather than the BJ-10 ex. It is also worth keeping an eye on the PD libraries, normally it does not take someone very long to write a driver for a new printer and put it out on PD.

What all this means is that the Amiga only talks to the printer in one way. This will not suit all printers, so between the Amiga and the printer there is a piece of software called a printer driver program. You will find these programs in your DEVs drawer. What this program does is to take the output from the Amiga and translate it into the correct codes for a particular printer. That is why you have a different driver for each printer type. You can change the driver by using the preferences program.

Dear AUI,

I recently managed to pick up two modems from an office clearout which were destined for the rubbish bin. Needless to say there was no accompanying documentation and not hav-

ing any experience with modems I wondered if you could give me some advice

The modems are:

1. BT Kilostream
2. Racal-Milgo COMLINK IV

Are either of these modems useable with my A500 if so what kind of cables should I purchase and which pins need to be disabled if any.

If I do manage to get one of them working I would like to set up user to user communication with a friend of mine who has a B2000 and a Hayes compatible modem. Is this possible with either of the two modems mentioned and if so can you recommend any software which would enable this communication?

**Vincent Codd
Harlow**

Dear Vincent,

Neither of the two boxes you have will work as a dial up type modem.

The Kilostream unit is very likely to be the property of British Telecommunications plc. It is normal to rent the Kilostream along with the special line.

Kilostreams are (well, normally) high speed data circuits. A special line is installed directly from an exchange with a Kilostream feed to your premises. A box called a network terminating unit (NTU) is installed at your premises, this NTU is the kilostream box that you have. It is a sort of modem, but it does not use audio tones in the same way as a normal dial up modem. Once you have a connection into the Kilostream network, your data is electronically routed to another exchange near where you want to communicate with. Another line and NTU are installed at that location, and as far as you are concerned you will have a point to point link. Various speeds are available, anything from 2400bps (very wasteful for a Kilostream) up to 64,000 bps. Various interfaces are also available such as V24, V35, V11 etc.

The Comlink 4 is a modem, but it is a baseband modem. This means that it needs a direct copper connection between two locations and there must be another Comlink at the other end of the circuit. There are a couple of models of comlink, model 1 can run from 1200bps to 19,200bps and the model 2 can run 40,800 bps to 72,000 bps Model 1 has a v24 interface and model 2 can have V35, V10 or V11 interfaces.

Sorry that is not a lot of use for you, but I thought that you might like to know a little bit about the devices that you have acquired.

As for comms software, I use Ncomm, but there are several others

about., such as Jrcomm, Access, Term etc, it really boils down to personal preferences.

Dear AUI,

I am the proud owner of a brand new A1500 (with the ugly black sticker pulled off) Why did CBM scrap AmigaBasic from 1.3.3 surely it was not that embarrassing, and the ascii table in the BASIC manual was easier to find than the one in Libs & Devs ?

I have decided that next time I come into some money, I shall buy a HD controller (by way of another step up the ladder towards a Syquest removable) I need more memory (I was somewhat disappointed to discover that DPaint III does not animate with one meg chip, although it does with 0.5 meg chip and 0.5 meg fast) So I need a little advice on which controller board to buy. I want the fastest board with 8MB of simm sockets and an external SCSI bus, the realistic side of £250.

I am considering:

The GVP Series II £199 all the above features.

The Nexus card, also £199 Bytes and Pieces say its the fastest they've seen.

The Inmate takes 68881 but uses zip chips + requires 68000 removal (something I've done before but ripping out the drive chassis and PSU is not my idea of fun) and it has no external SCSI controller.

The IVS Volkswaggon -sorry Trumpcard only takes 4Mb.

The IVS Grand Slam, a NEW controller, first advertised in June provides an extra parallel port very handy for printer+sound sampler but no good if my software will not use it. Claims transfer rates of 2Meg/s which is FAST...since they tried to trade me an A500 and £299 for ye olde A2000e with ye buggerede timings and ae RAME carde ine thee CPUe slotte. But at £235 for a parallel port and a fast controller I'd pay.

Please tell me more about these cards and give their theoretical max transfer rates. Will they all boot of FSS partitions? Tell me which manufacturer to trust and who the nice dealers are.

As I've mentioned nice dealers I'll give Hobbyte a little plug here and say what helpful people they were when I bought my A1500, even when I made a fuss because the couriers put the machine on the wrong truck and it didn't arrive on the expected day.

How can you tell which Denise chip is which? Mine has R8 printed on it after the component number, will it display the productivity modes?

Also where can I get info on how to write mountable device handlers rather than devices like SPEAK. ▶

◀ Please help me for 30 issues worth.

**D.S.Gibb
Sussex**

Dear D.S.Gibb

I cannot go into specifics about controllers here, that requires a lot of testing and a full article. However as I was reading your letter I could not help but think 'Why the fixation with speed' if you are going to get a Syquest then speed is not important, The Syquest is a slow device. Why put all your eggs in one basket. If a the board blows, you lose the lot. I'll tell you something else, there is very little that will match the RAM: device for speed. I put all of the SAC C files into RAM: and compile from there, and That is really fast.

Consider a 8 meg ram card NOT simms or ZIPs, but bog standard chips, the C2058 at £184 (including 2MB) and the A2091 SCSI card at £189 is very reasonable works out at about £300 if you knock off the price of the 2MB ram. RAM for the 2058 come in at about £70-£75 per 2MB.

I do not normally recommend dealers apart from ones I have had dealings with. It is comments like yours for Hobbyte that you should look out for.

Please burn your old English dictionary, that caused havoc with the spelling checker!

The Device handler, see section G of the included and autodocs.

AmigaBasic, some say about time too, others say keep it. Me, well I don't care one way or the other. There are plenty of good Basics available for the Amiga, and it might be so that something new can be added. I tend to use CanDo or C (and a lot of scripts!).

Don't worry about the Denise chip, you will not have the new one. You need the WB2.0 system, but if you really want to know there are some version registers hiding away in the new chip somewhere.

Dear AUI,

I am the owner of an Amiga A500 (Kickstart 1.3) One day I found out that I had the new A8372A agnus chip so I decided to upgrade to one Meg of chip ram.

In my Amiga there is room for 4 extra chips in the PCB. My warranty is well out of date so I went ahead to do the job myself.

To my disappointment I found the chips to be around £14 each, aaahh so I thought I had it with that idea. That was until I passed a computer shop that advertised half meg upgrades for the Amiga at £29. Brilliant! I could buy one of these and take out the chips and solder them into the motherboard on the Amiga.

Time passed, did the job well, put back on the lid switched on the computer to find that there was no differ-

ence. A long hard study was needed and I came up with the idea to cut the track between the bottom two solder pads of jumper JP2 and then solder the top two solder pads with a solder bridge of JP2

Switched on checked the memory and what do you know? I had 1MB of chip.

I also have a half meg upgrade that slots under the trap door and when this was inserted (of course, the machine was off) the Amiga gave me a guru look. Switched off the Amiga, switched off the half meg and switched on the computer and it worked.

It seems if you fit an upgrade to get 1MB of chip, your Amiga does not accept anything under the trap door. However I found a way round that.

1. Cut the tracks on JP2 so all you are left is with 3 solder pads.

2. Get three long pieces of wire and a 3 way switch that has 3 connections to it.

3. Connect each wire to the solder pads.

4. The solder pad in the middle of JP2, take this to the middle connection of the switch.

5. Take the remaining two wires to each side of the switch.

6. Affix the switch to the outer side of the Amiga for easy access.

7. Replace the lid and you should be ready to switch on.

Remember that you can only have one item on at the same time (chip or fast mem otherwise the computer will present you with Guru)

**J.Wood
Wigan**

Dear J.Wood,

Thank you for the tip.

I have not tried this out, so I can only say to other readers...

You do this at your own risk, and it will invalidate your warranty. ONLY attempt this if you are VERY competent at soldering.

Dear AUI,

I have two problems, one of which is actually mine, and the other, a friend. First here's my problem.

I recently purchased an Amiga 500, a half meg expansion and an RF modulator. For some reason I cannot get the television set I am using to display the colour graphics it should be displaying. I know for a fact, that my television (of the MTC family) is capable of displaying the graphics because I have watched some of my friends video projects and they were presented flawlessly.

I have tried everything to correct this colour distortion. First I switched from the normal cable witch comes with the Amiga520 RF modulator with a shielded RF cable, but my problem still persisted. I then resorted to plan B. I used the compos-

ite video out on the RF modulator and plugged it into the video in on my VCR. Yet the problem still exists. I have seen another RF modulator known as the VIP, which is said to have a superior composite out. I am trying to find out whether or not this VIP is the thing for me. I know that a monitor would solve my current problem, but one of the reasons I bought the Amiga was to use it for some very (and I mean very) amateur video publishing. Please can you suggest any ways of improving the colour quality.

The second problem is with GURUs. My friend bought an Amiga 1000, which worked fine until he attached a 2 meg expansion to it. With 2 meg expansion (attached) the Amiga produces many Gurus and sporadic random and sometimes continuous resetting. When this occurs, the only way of correcting this is to turn the power off and then on again. My friend is wondering whether or not there are any books available that list the Guru's and/or if you have any advice to remedy this problem?

**Brian Sue
Colchester**

Dear Brian,

Your letter tells me just about everything except what the fault is!

What kind of distortion? Is there a picture at all? etc.

Taking a guess at the problem I think that you do have a picture but it is showing little, if any colour. There are two possible things that can cause this that I can think of. The first is a faulty modulator, and you can guess the cure for that!

Try the modulator on another TV. and see if there is any difference.

The second is that you have not tuned the TV into the modulator signal correctly. Modulators are very 'dirty' in terms of there RF output, and many transmit a signal on several different points throughout the TV's tuning range. See if you can find another signal somewhere else in the TV band. It should be somewhere near CH36.

Another point to remember is that if you are connecting a VCR to the same TV, then the VCR will also use a channel near or on 36. If this happens then the two signals will mix and cause all sorts of funny effects. Beware of composite and RF outputs. RF outputs connect into aerial sockets. True composite outputs connect into Video IN sockets. Sorry I can't be of any better help there.

The A1000 problem, that is slightly easier. Unplug the RAM and see what happens. If the problem goes away then I can think of two possibilities. The first is that there is a faulty ram chip (or several) in the expansion; secondly the A1000 power supply might be at its limit and the extra ram is overloading it.

Gurus, well there are several sources of documentation, I use an INFOMAT produced by bitstream. However the main listings of the alert codes are contained in the Rom Kernal Manuals, Includes and Autodocs, in the exec/alerts.h listings, page D-21 of my copy. (Blue covers).

Dear AUI,

Congratulations on a magazine several cuts above the rest. I bought my Amiga about five years ago and have regularly bought your magazine for clarity, consistency and content. My reason for writing is quite simple, but so far insurmountable problem which is that of my printer.

My company has supplied me with a CITOH PR310 with a serial interface, it is a superb printer by any standards. The problem is that I do not seem to be able to obtain a printer driver for it. I wrote to both the printer manufacturer and Commodore UK, not to mention a couple of software houses, all my replies were polite and of the pass the buck format. You are my last hope as I do not wish to splash out on a new printer of equal stature. I can get the most basic of alpha-numeric printouts using an Imagewriter II driver, as I have to produce electronic technical notes and reports for my own use, it is impossible without the graphics facility of my WP.

A final query I have, is it possible to run the workbench V2.0 on the earliest of Amigas. Thank you in anticipation of your time and effort.

**S.R.Neary.
East Yorkshire**

Dear S.R.Neary,

Last question first, I am not sure if the A1000 will support WB2.0 or not. It rather depends on if the upgraded chip set can be fitted. Most of the WB2.0 functions should work on the A1000 but only time will tell. As for the other Amigas, there should be no real problems at all.

The printer problem is a bit of a sticker. I cannot find a CITOH driver anywhere, but that does not mean that they do not exist. As you are obviously involved in electronics, I will assume that you are familiar with how printers work. There is a PD program called PrtDruGen by Joergen Thomson. Most PD libraries will have it and it is also available for download on CIX. It is a bit tedious to use from scratch, but it will build a printer driver for you. It will not be as fast as the WB1.3 drivers but at least it will solve a lot of your problems. You should have the printer handbook available, as you will need to enter the control sequences that tell the printer to do various functions.

From scratch it took me about 2 hours to get a debugged driver working. (Once I have read the instructions a few times !)

Write TO REPLY

This is where you get your chance to speak – or write – your mind about what's bugging you – or your computer. Bud Vennos fields the bouquets and the brickbats.



Dear AUI,

I have some comments and queries regarding Shareware releases.

1. Is it fair for a programmer to issue a program as Shareware, requesting payment, and yet stating clearly in the document things like "I am in no way responsible for any damage or loss of data caused by this program" and "use entirely at your own risk". I can accept the disclaimers from someone who is giving their work away as Public Domain, but expecting payment for a product and at the same time accepting no responsibility is surely questionable. I have come across this often.

2. The inclusion of Shareware as opposed to Public Domain on many cover disks from most Amiga publications lead me to an interesting thought. I wonder how many people, having paid up to £3.00 for a magazine and cover disk, find that many of the wonderful games and utilities that they now possess, and find invaluable, will on occasion cost £30 or more to morally & legally keep, finding themselves in a position where they can neither afford to register them or find the strength to throw them away, despite the knowledge that it is dishonest not to do one or the other. I would have thought that many people, especially teenagers, and the unemployed find themselves in that awkward position.

I am not against the principles of Shareware, but

surely putting so many on one disk will make it much less likely that the programmers featured will receive their well deserved and reasonable reward. If someone cannot afford to register all the utilities and games that they want to use. It is unlikely that they will pay for one, but not others. The "might as well be hung for a sheep than a lamb" phrase springs to mind.

3. Finally, I have several utilities that I would like to register, but I am put off by the following: the money requested is for amounts like \$5 or \$10, the addresses are overseas and looking at the dates some of them are dated in the early 1980's. Are the amounts still appropriate after such a long time? The author may have moved years ago. Can you send a cheque? Your suggestions on the best way to register overseas shareware would be appreciated.

**Mr. A. Trigg,
Sheffield.**

Dear Mr. A. Trigg,

Your points are valid, and arguments for and against Shareware have been the subject of many heated discussions.

1. I think that it is fair that if someone wishes to devote their spare time to writing utilities, games, or whatever, that they should gain some reward if someone else finds the end result useful to use. Although there are disclaimers, most registered users are given help and support by the programmer. You must under-

stand that most people in the UK treat Shareware as PD and, as such, program registration is small. I think that Shareware programmers are aware of this and have disclaimers for those who do not wish to pay.

2. As stated above, program registration is small. The wider the spread of the product, the more chance that users will see the product. If the program is not distributed, no one will be able to register. If 0.1% of magazine buyers register to a single shareware program on a coverdisk, the programmer would be very happy indeed.

Of course, many will use the program immorally (not illegally), but without an up-to-date, or complete, version (only available after registering) they won't be able to use the full features of the program. If they are happy with that, then so be it, but if they really find the program useful then they may wish to get the full version. That is what shareware is all about.

3. This is a grey area - you have highlighted most of the problems one faces when attempting to register. I would say that if you register to dated programs be prepared for no reply. You could always try the PD companies which advertise in AUI, they deal in Shareware too, and many will have up-to-date information on Shareware authors.

Dear AUI,

A few years ago I played MANIC MINER on my friend's Spectrum and since then I have bought an upgraded Amiga A500 and would like the game for our computer. I have phoned places in Edinburgh, but nobody seems to have the game. Please could you send me some information on where I could get the game.

**Lucinda Mason Brown,
North Berwick.**

Dear Lucinda,

MANIC MINER, and the follow up JET SET WILLY have been written for the Amiga by Software Projects. Each game is £9.99 and both are avail-

able from: Computer Software Distribution, 315 Fairfield Road, Droylsden, Manchester. M35 6EB. You can ring them on 061-371-8423.

Dear AUI,

I recently purchased "Red Baron" for the Amiga, and I thought I would raise a couple of points. From the outset, let me say that I think the program is excellent, but with one major caveat.

My system consists of a B2000 with 68030/68882 (33MHz), 3 Meg 32-bit RAM, 3 Meg FASTRAM, and a 65Mb Hard Drive. Obviously not a standard setup! On this system, "Baron" runs very smoothly at the highest detail setting. In fact, it is more impressive than the PC version on a 386SX! This is where the problem lies. On a standard A500 floppy based system, the frame update is very slow.

Now, I know that every magazine is going to review this software badly because of the speed on the A500, but it does state on the box that processors under 14MHz are not recommended (A500 runs at 7.14MHz). It also recommends a hard disk and lots of fast RAM.

The main reason for this is that in the USA, the Amiga is treated as a serious computer that is also used for games, unlike here, where the situation is the opposite. In the States, the A500 is nowhere, with the A3000 and accelerated B2000s the most popular models. I am not suggesting that you, and other British magazines, should review games on the basis of those machines, as the A500 is so popular here, but, I feel they should get a mention. Compare this with the PC situation where the XT is the most popular format, yet in reviews, the 286/386 machines (and even 486!) are catered for. It is not just the Amiga which has this speed problem. A lot of major releases on the PC are totally unusable on anything less than a 386, eg Wing Commander, Red Baron!

I have enjoyed a lot of software recently that would not

be the same on a floppy based system, either because of interminable swapping of many disks or unacceptable "jerkiness". Examples of recent programs that are greatly enhanced on the faster system are: Birds Of Prey, Heart Of China, Rise Of the Dragon, 4D Sports Driving, Cruise for a Corpse.

If performance on a faster systems is not mentioned in the press, I feel that certain companies will stop producing software for our machine, so please consider non-68000 floppy based A500 users in future.

**Iain Mackenzie,
London.**

Dear Iain,

Amiga magazines have not adapted to the different systems, as they have appeared. Pick up a review of a game in a PC magazine, and you will have information as to which systems are best for different games. The body text also refers to the difference in speed using different systems. PC games are written to use the processor, and so a faster processor always means a faster game.

The Amiga has its own custom chips which run at a set speed no matter which processor is inserted, so, a faster processor doesn't mean a faster game. But, I do agree with you. Most games which are enhanced with hard disks and accelerators state so on the box - game reviews should provide more information and less warble!

Perhaps the main trouble is that the Amiga has been very largely presented in this country as a games machine pure and simple. So the perception is, wrongly, of players who are in their early teens who can't afford anything but the basic Amiga.

Dear AUI,

I have had my Amiga since November and I have been enjoying it since I got it. But about five weeks ago my colours started changing, like on Deluxe Paint III a lot of colours have changed and most games I can't use like Bart

Simpson, because you have to spray everything that's purple to a different colour with a spray can, but now everything in the game is nearly the colour purple. I own an Amiga 500Plus and have a Star LC-10II printer problem as it is driving me up the wall. Can you also tell me if it is legal to make back up copies of games and which copy disk is the best to use.

**Adrian Fail,
Penrith.**

Dear Adrian,

Let's get one thing straight before I continue, I have no intention of recommending any copying product, as backing up games is illegal unless permission is given in the manual to do so. Any game where permission is granted should be copiable via Workbench.

You may be the recipient of a virus - don't check your game disks - but check Deluxe Paint III with the virus checker on this month's disk. If you have a virus then you'll have to get replacement disks from your local store - or you may have to send them to the software companies with a small re-duplicating fee.

If you haven't got a virus, I would think that you have damaged your Amiga by plugging in your printer without turning the Amiga off. Try disconnecting all extra equipment, including the mouse and joystick. If the problem occurs your Amiga is damaged and will need repaired.

Dear AUI,

After reading the review of the Virgo RAM board in the February issue, I decided to send off for a V4000 board with 1.5Mb of RAM fitted. As my Amiga has Kickstart 1.2 installed, it looked like I could get 1Mb of CHIP RAM without having to buy Kickstart 1.3.

On reading the instructions, I came across the first problem - this board will only work with Kickstart 1.2 if there is at least 2Mb of RAM fitted. Luckily, I already had a half meg expansion, so I took the chips out and put them into

the Virgo board. I switched the board to FAST RAM and plugged it in, switched on, and it worked perfectly. I then switched it to CHIP RAM mode and switched on again, but this time my Amiga wouldn't initialise. I rang Virgo's help line and they confirmed that you DO need Kickstart 1.3 to access the 1.0Mb CHIP RAM option.

Virgo offered to sell me Kickstart 1.3 for £25 or give me a full refund. So I am now waiting for the chip to arrive as the product is good value for money. However, potential purchasers should be aware of these two problems.

**G Proctor,
Lancs.**

Dear G Proctor,

Thank you for sharing that piece of information with us. It is not always possible for reviewers to notice everything, and sometimes problems like this slip through the net. However, in their treatment of you, Virgo are clearly living up to their responsibilities, especially in offering you a full refund. It's a pity that all mail order companies don't act in this way.

Dear AUI,

I would like to say how I enjoyed January's cover disk, especially the Lemmings Shoot'em-up. As a Lemmings freak I wonder if you could solve a problem with "Lemmings" and "Oh! No! More Lemmings" disks from Psygnosis?

I have an Amiga 500 upgraded to 1 meg. When Lemmings is inserted into the drive, the logo appears then cuts out - horizontal white lines appear across the screen - logo still visible. The disk drive accesses causing four beats, and the program won't load. When "Oh! No!" is inserted, I encounter the same problem.

I have tried the programs with and without expansions, but without joy. Psygnosis say that my disks are OK, but other disks load without any trouble.

**Ray Lennard,
Macclesfield.**

Dear Ray,

You certainly have a problem, but you are being a little vague with your explanation. Do other Lemmings disks work OK, or just other disks? Have you taken your expansion RAM out of the Amiga, or just switched it off? Obviously, Psygnosis would have checked the disks and they were OK, but that does not mean that the disks are not faulty now. Have you access to another Amiga - at a local store? If you have, I'm sure they will be able to try your disks on their machines - and their disks on your machine. I think that it is possible that your Amiga is at fault. If it is still under guarantee you'll be able to get it repaired.

Dear AUI,

Sometimes I think you are barmy up there in London... I have just bought your March magazine and I think it's great! It must be one of the best you have done. There is loads and loads of interesting stuff but why do you make it so difficult to read? One page the GVP IV24 is totally impossible and others are pretty difficult too. Do you have so much sun there in London that you don't care about your vision?

I'll go on buying the magazine but please, please spare my eyes I don't want to wear glasses just to read your terrific magazine!

**Pete Moraille,
York**

Dear Pete,

You are certainly right and glasses - dark glasses or magnifying glasses - were called for some of the pages in the March AUI. I can assure you that it wasn't our fault - at least only partly. The printers seemed to have loaded extra ink into their machines on top of some oddly dark design ideas - very dark ones. Anyway, next month it should all be different (Where have I heard that before?) and a bright and readable new design scheme will be unveiled. But keep your shades close by just in case...



The Fat Lady Sings

Vol.27

N°15^{16/17}

No, it ain't over till The Fat Lady Sings (even if you'd hoped it was!)

WiN! WiN! wim!

This month's great, terrific, blindingly marvellous competition is to find if you can read...No, what we mean is can you read the magazine? Well, seriously then could you read last month's *AUI*?

Let's start again. Can you read this *AUI*? You can? Well, to be absolutely honest that's probably a mistake. Because generally we have decided that we should put out magazines that are shrouded in mystery. Last month, for example there were simply loads of pages where we succeeded wonderfully. Nobody could read them. The colours were dazling, of course, and one day copies of *AUI* will be fetching as much cash as Van Goghs - especially in his lifetime.. (Yes, naturally, you know he only sold one picture. Just joking, folks!) But it was no accident that on those gloriously coloured pages the text just disappeared and you couldn't see a thing! Oh no, it wasn't an accident, it was to give you poor bedazzled readers the chance to wonder what really we were writing and to win a magnificent prize if you could just tell us what lots of those mysterious but beautiful pages actually said.

We can't tell you which pages you have to tell us about because of course the page numbers disappeared too. Ha Ha! Isn't this publishing business fun?!

So all you have to do is spend enough time - say a few years - and write down, in any Amiga w/p, say Professional Pagestream, Scrabble or New Horizontals' KickWrite, exactly which words you can decipher from the March *AUI*. In a few years you should be able to make out quite a bit...

We'll see who has sent in the winning entry by who tells most of what was on those gorgeous multicoloured pages which were cleverly created to be unreadable by ordinary mortals. So prove yourself a man among men, a User with Robocop vision, be a Lynx (no relation to the handheld console based on Amiga technology of course! Thank you, R.J. Mical and Dale Luck.) eyed optical driver! Solve the mystery of the unreadable *AUI* pages...

Please write to us in black ink on carbon paper, white type eraser on ordinary paper or bright red - preferably blood - on dark blue, you know the usual colours in which *AUI* is printed. We can't read anything else now ourselves anyway!

The truly madly, magnificent prize? Something no other magazine would dare to give: a full-size, yes, we do mean full-size, no silly scale models for *AUI* - printed out copy of the British Isles - in stunning unreadable colour, of course.



The Thin Lady wails

In addition there will be a computerised Amiga-driven white stick and the complete Palo Alto telescope in California. Plus - yes, there is more - 2 fantastic weeks holiday down an unused coal mine without a lamp but with a shovel. And, in the coal mine you will meet none other than everyone who has been responsible for choosing the colours that have appeared in *AUI* and given such terrific business to Moorfields Eye Hospital which is fortunately just round the corner from *AUI*. Meeting all those "Hue and Saturation Terrorists" as they so wittily call themselves...wow, won't that be a thrill? (And you will be equipped with a technicolour pickaxe too!)

Answers, on an old white £5.00 note please, to *The AUI Is A Sight For Sore Eyes Competition*, *The Spectrum Computer Colourblind Society*, Rainbow Terrace, Blind Alley, Opticians Avenue, Spectacle City, Lensland, Utakeaganda.

The Editor's diversion is funnel.

25 Things You Never Wanted To Know About Amiga Graphics

(By The Fat Lady's exclusive colour consultant B.Green)

1. Archeological excavations at Pompeii, which was destroyed in 67 B.C. by Mount Vesuvius erupting, have revealed graffiti on certain vomitorium walls that were created with a gamma version of DPaint 1/2.
2. The programmer of E.A.'s Deluxe Paint IV is not a man as another Amiga magazine believes. She - the programmer - is willing to provide proof of sex - or rather gender - if necessary but has been advised that the magazine in question probably couldn't tell the difference anyway.
3. Newtek's Digipaint is not a fingerpainting program. It requires a mouse. No, not a toy mouse or the one caught in the trap in Teresa's bedroom but a computerised one.
4. The graphics chip in the Amiga is not, as is usually thought, called the Obese Agnes or Anorexic Denis but the Slimline. No Additives Gary. It was named after Gary Fenton on whose 10th birthday it was invented. Each chip bears his initials "GF" and the footprint of his dog Lorraine which can be seen if the chip is removed and washed carefully in Dettol.
5. The Amiga is used by the Miami Dolphins American football team to keep graphical score on their 40 foot (65 meters) wide scoreboard in Georgetown, Carolina. It was seen on TV at the 1990 Washington DC Superbowl.
6. The very large figures, almost 3/4 screen size, used in the famous early Amiga game "Sword of Sodding" were not created graphically. They were really very small people (Munchkins) who agreed to live inside the Amiga when the cast of "The Wizard of Oz" was made redundant. Since then the Munchkins have found employment as photo standins for the U.S. Vice President so there are no more copies of the Sodding game available today.
7. Barry McCarthy had his start in computer graphics through using a ZX80 computer to create pictures on the pavement outside the National Gallery. (Occasionally you can still see him there with his A3000 plus CD drive)
8. Picasso once said "If I had a really sexy Amiga, I would never have painted in the style I did." (Picasso was Spanish so perhaps he was using the word "Amiga" as "girl friend" which is what it means in Spanish. No-one knows for sure. Ole.)

9. A few A500, experimental graphics machines, were issued without being able to use 24 bit graphics only 23 bit. If you have one, you can tell because a message that says "I've got a bit missing, Irving." often appears on the screen when you load up anything in Ham. If yours is one of these rare computers, write to Commodore and tell them "My A500 has a bit missing." They are very, very interested in tracing these computers and will no doubt be willing to pay several thousand pounds to buy the machine from you. You could also write to some of the mail order companies and ask them if they have any A500s with a bit missing. From what we hear, some of them seem to have nothing else.

10. You can now buy Workbench 2.75 graphic kits. These are extra textures that allow you to cover your Workbench (1.2 and above) with such textures as fur, mud or fluff. Shortly to be released are Industrial Carpet, Sand and Skinned Flesh (that one is very colourful). They will certainly add excitement to the normally boring Workbench colours. For further information on textures see "The Soft Alternative - Feel the Caressing Comfort of Amiga Graphics" by Yuri Large (price £119.99 including the upholstery samples).

11. Sprites and Fantavision for the Amiga come in orange, lemon and kiwi fruit flavours.

12. Aliasing was invented by an Amiga user in Dartmoor Prison in 1984. Anti-Aliasing was invented a warder in Strangeways in 1990.

13. The Real 3D graphics program is not the same as the Unreal 3D (sometime called Artificial 3D) program. However, to use Real 3D you have stand at least 6 metres from the screen to allow the third dimension to project itself outside the screen and toward you in the correct perspective. For further information see "Real 3D - Perspectives for the 1600's" by Alonso Ucello.

14. "Pixel" comes from "Pixelated" meaning chaotic, disorganised or crazy.

15. Graphics tablets are dangerous to children and should be taken only on doctor's orders three times a day.

16. The Flicker fixer was a device used for castrating a famous cowboy's horse.

17. The basic resolution for an Amiga is either 320 or 640 pixels horizontally, 200/256 or 400/512 vertically and 17 1/4 by 25 3/8 diagonally.

18. Interlacing doubles the vertical resolution of any Amiga shoe-based graphics package.

20. 2 colours (monochrome) colouring is often used on the Amiga because it requires the least amount of screen handling due to the way the Amiga constructs its display. 1 colour displays require less than half again and displays with no colour at all are easily the most economical.

21. Overscan - more correctly "Overscam" refers to programs that claim to do more in graphics than any other and are very expensive.

23. Halfbrite is a reference to the person(s) who created AmigaDos. Hence "bordering on Halfbrite" means stupidly created graphics or page colours which do not allow text to be read.

24. The Amiga display is normally redrawn 60 times a second to allow you to count each one on the seconds of your watch. For those with watches that run slow there are also utilities, for example, Notkwiknuff on the last *AUI* coverdisk, that can allow programs to run at 50 frames per second. For those with low blood pressure and hence slower pulses, or permanently half asleep, there are special programs such as Snore from Bedsoft, that will slow the graphics display down to 15 frames per second.

25. State of the Art refers to any graphics program which the manufacturer wants to sell at once, that has taken a long time to do and is very late. (Some "State of the Art" graphics programs or devices are called "Vapourware")

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Amiga Format: Where quality is concerned, Vidi produces some of the best results I've seen on any digitiser at any price.

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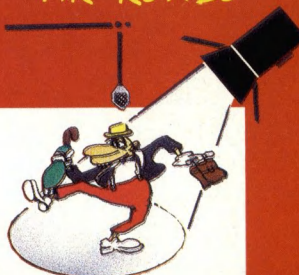
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ACTION



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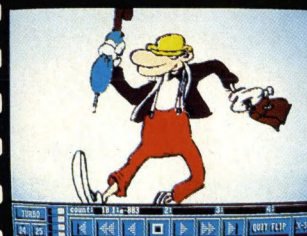
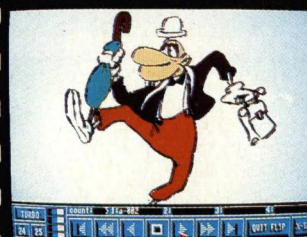
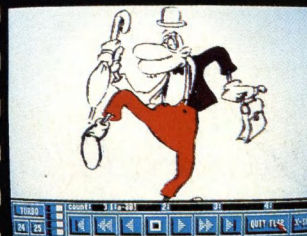
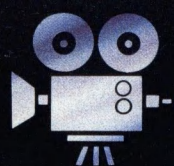
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